HP StorageWorks

Interface Manager and Command View TL user guide

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Contents

Figures

Tables

About this guide

This guide provides information about:

- Understanding the different user interfaces used with the Interface Manager card.
- Installing and using Command View TL software.
- Using the Interface Manager command line interface (CLI).

Intended audience

This book is intended for use by system administrators and IT personnel responsible for operating and maintaining an ESL library.

Related documentation

In addition to this guide, please see other documents for this product:

- *HP StorageWorks Interface Manager and Command View TL installation guide*
- *HP StorageWorks Interface Manager and Command View TL installation instructions*
- *HP StorageWorks Command View TL SMI-S Provider installation instructions*
- *HP StorageWorks ESL E-Series tape library unpacking and installation guide*
- *HP StorageWorks ESL E-Series tape library user guide*

These and other HP documents can be found on an HP web site: http://www.docs.hp.com.

Document conventions and symbols

Table 1 Document conventions

Convention	Element
Medium blue text: Figure 1	Cross-reference links and e-mail addresses
Medium blue, underlined text (http://www.hp.com)	Web site addresses
Bold font	• Key names • Text typed into a GUI element, such as into a box • GUI elements that are clicked or selected, such as menu and list items, buttons, and check boxes
Italics font	Text emphasis
`Monospace font`	• File and directory names • System output • Code • Text typed at the command-line
`Monospace, italic font`	• Code variables • Command-line variables
`Monospace, bold font`	Emphasis of file and directory names, system output, code, and text typed at the command line

⚠ **WARNING!** Indicates that failure to follow directions could result in bodily harm or death.

△ **CAUTION:** Indicates that failure to follow directions could result in damage to equipment or data.

🗒 **IMPORTANT:** Provides clarifying information or specific instructions.

🗒 **NOTE:** Provides additional information.

☼ **TIP:** Provides helpful hints and shortcuts.

HP technical support

Telephone numbers for worldwide technical support are listed on the HP support web site: http://www.hp.com/support/.

Collect the following information before calling:

- Technical support registration number (if applicable)
- Product serial numbers
- Product model names and numbers
- Applicable error messages
- Operating system type and revision level
- Detailed, specific questions

For continuous quality improvement, calls may be recorded or monitored.

Subscriber's Choice alert notification registration

HP strongly recommends that customers sign up online using the Subscriber's choice web site:

http://www.hp.com/go/e-updates.

- Subscribing to this service provides you with e-mail updates on the latest product enhancements, newest versions of drivers, and firmware documentation updates, as well as instant access to numerous other product resources.
- After signing up, you can quickly locate your products by selecting **Business support** and then **Storage** under Product Category.

HP-authorized reseller

For the name of your nearest HP-authorized reseller:

- In the United States, call 1-800-345-1518.
- Elsewhere, visit the HP web site: http://www.hp.com. Then, click **Contact HP** to find locations and telephone numbers.

Helpful web sites

For third-party product information, see the following HP web sites:

- http://www.hp.com
- http://www.hp.com/go/storage
- http://www.hp.com/support/
- http://www.docs.hp.com

1 Introduction

The HP StorageWorks Interface Manager for tape libraries is a management card designed to consolidate and simplify the management of HP StorageWorks ESL9000 Series and ESL E-Series tape libraries. The Interface Manager card provides the following features:

- Simple, unified, graphical setup and configuration of FC interface controllers.
- Remote management of FC interface controllers via a Web-based GUI or command line interface.
- SAN-related diagnostics for key library components, such as interface controllers, drives, and robotics.
- Additional advanced SAN security and management features are available via licensing. These features improve security, performance, reliability, and ease of control.

SNIA compliance

The Storage Management Initiative (SMI) was created by the Storage Networking Industry Association (SNIA) to develop and standardize interoperable storage management technologies and aggressively promote them to the storage, networking and end user communities.

For more information about SNIA and the SMI, see the following Web site: http://www.snia.org/smi/home.

The HP StorageWorks Command View TL Provider follows the Storage Management Initiative Specification (SMI-S) and provides an interface for SMI-S compliant applications to manage HP StorageWorks tape libraries. The Command View TL Provider is installed along with Command View TL.

For more information, see the *HP StorageWorks Command View TL SMI-S Provider installation instructions*.

User interfaces

Three different user interfaces (UIs) can be used to control the Interface Manager card. These UIs are provided by the Interface Manager card or by Command View TL. This chapter explains the different types of UIs, what each UI is used for, and when each UI should be used. The three UIs are as follows:

- Serial—Uses a command line interface (CLI) and connects directly to the Interface Manager card through an RS232 serial interface rather than through the LAN. The serial UI takes precedence over the Command View TL and Telnet UIs and prevents any other open sessions from communicating with the Interface Manager card.
- Telnet—Uses the same CLI as the serial interface, but requires the IP address of the Interface Manager card to initiate the session. This IP address can be set through the Interface Manager card serial interface or cascade port or, on ESL E-Series libraries, through the library Operator Control Panel (OCP). The advantage of using Telnet over the serial interface is that users can Telnet from any client machine that is on the LAN; a separate serial connection is not needed.

The Telnet UI has precedence over the Command View TL GUI and prevents any open Command View TL sessions from communicating with the library.

NOTE: If you use Telnet to change the IP address of the Interface Manager card or library, you must log in to a new Telnet session with the new IP address.

- Command View TL— Is a browser-based graphical user interface (GUI). This is the preferred UI for controlling the Interface Manager card and should be used in most circumstances. From any client on the LAN, you can use a browser to access Command View TL, which is hosted on a management station. For more information on using Command View TL, see Command View TL.

Order of precedence of user interfaces

The order of precedence of the three UIs used with the Interface Manager card is as follows:

1. Serial
2. Telnet
3. Command View TL

Only one session can be open at a time (serial, Telnet, or Command View TL). However, it is possible to have multiple Command View TL GUI clients open simultaneously because these clients all share a single session. If you attempt to open a session when another session of higher priority is currently open, the system displays an error message and the lower priority session will not start. If you attempt to open a session when another session of lower priority is currently open, the system warns you that another session is currently open and asks if it is OK to terminate the lower priority session.

CAUTION: While it is possible for an administrator to terminate other sessions by opening a serial or Telnet session, HP does not recommend it. If, for example, someone performs a firmware upgrade using a Command View TL GUI client and that session is terminated prematurely, the firmware upgrade will fail and can cause the device being upgraded to require physical repair.

Network configuration overview

With the ESL9000 Series tape libraries, the external LAN communicates directly to the Interface Manager card using the card's network IP address. The Interface Manager card processes requests and relays information to the Fibre Channel (FC) interface controllers. The robotics controller is connected to one of the FC interface controllers.

ESL E-Series libraries contain a private LAN internal to the library. The library cabinet controller provides a bridge between the external LAN and the library internal LAN and Interface Manager card.

Figure 1 and Figure 2 show how the different UIs communicate with the Interface Manager card in the various libraries.
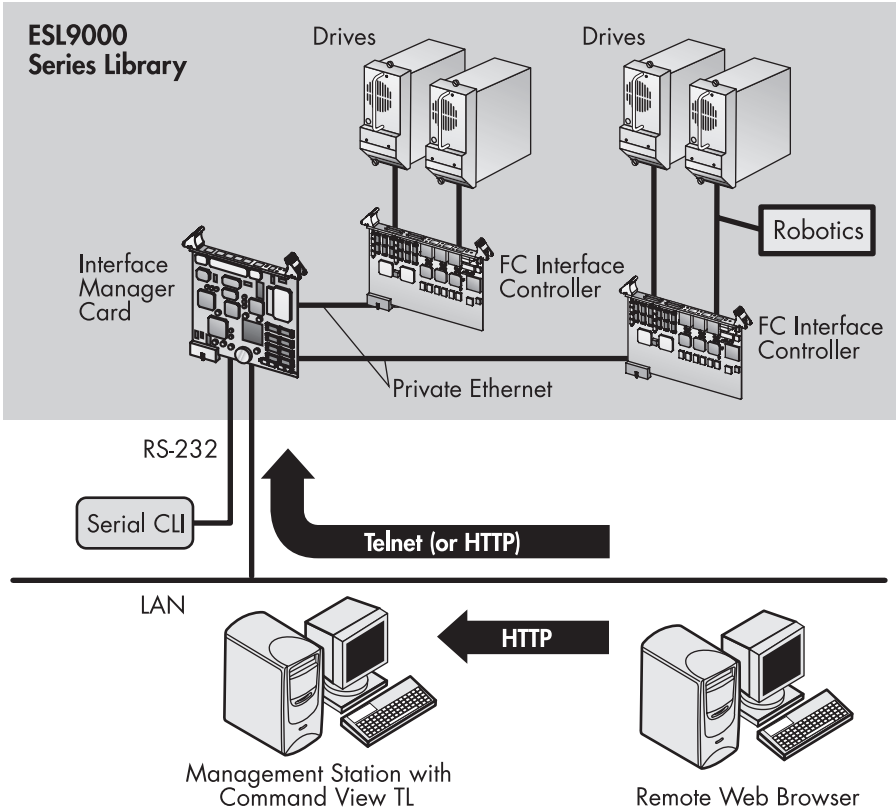
Figure 1 Network configuration for ESL9000 Series tape libraries
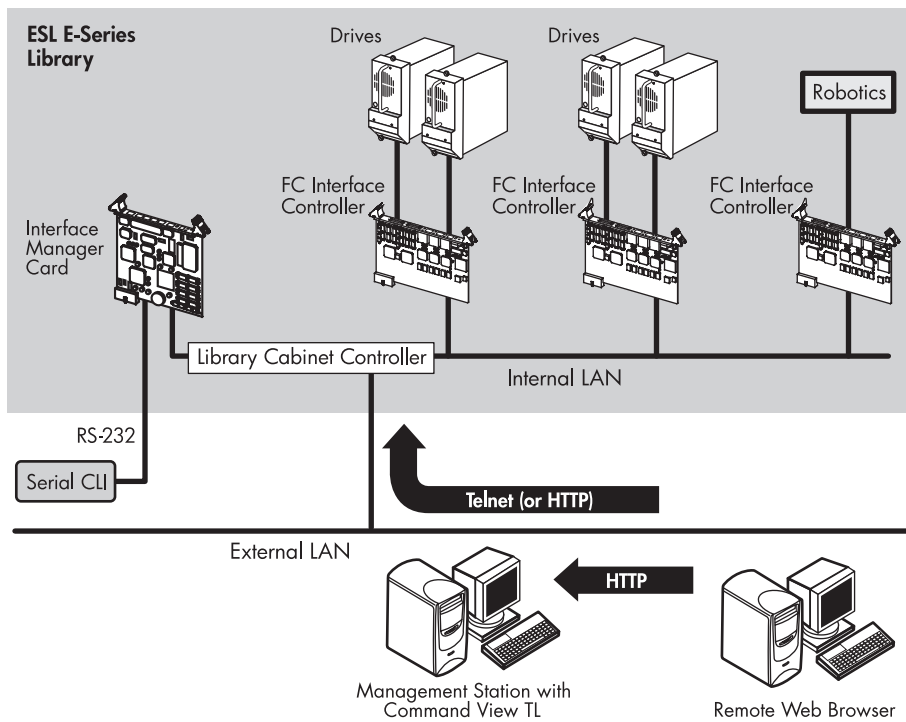
Figure 2 Network configuration for ESL E-Series libraries

2 Command View TL

Overview

Command View TL provides a browser-based GUI for remote management and monitoring of your Interface Manager card through a LAN. Command View TL is the preferred user interface for controlling the Interface Manager card. In conjunction with the Interface Manager card, Command View TL provides the following:

- Configuration and management of the Interface Manager card and FC interface controllers
- Management of the entire library system
- Hardware inventory and identity information
- Status information for connected hardware
- Error reporting and comprehensive error logs
- Firmware management
- License management

Command View TL is installed on the management station and communicates with the Interface Manager card through the LAN. The management station processes information from the Interface Manager card and hosts the Command View TL GUI. You can access Command View TL, either from the management station directly or through any client on the LAN, by using a browser-based GUI interface. Multiple Command View TL GUI clients can be open simultaneously across the LAN, and multiple ESL Series libraries can be managed through the Command View TL software.

> **NOTE:** Prior to version 1.5, Command View TL was called *Command View ESL*.

Prerequisites

For servers, Command View TL requires a management station (server) with a minimum of:

- Pentium IV 1.6-GHz, 512-MB RAM.
- 10/100 Base-T network card (a static IP address is recommended).
- Microsoft® Windows® 2000 Professional or Server edition SP3, Windows XP Professional.

For clients, Command View TL requires the following:

- Microsoft Internet Explorer 6.0 SP1 or later, or Netscape Navigator 6.2 or later. Ensure that Java™ support is enabled in the browser.
- An Internet connection is recommended so that Command View TL can receive firmware and software release information automatically from the HP Support web site.

Installing Command View TL

NOTE: If you are upgrading from a previous version of Command View TL (Command View ESL prior to version 1.5), follow the procedure below to install the new version over the old version. All previous settings (device list, support tickets, proxy settings and so forth) are migrated during the upgrade.

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1. Insert the Command View TL software CD into the CD-ROM drive of the designated management station.
2. If autorun is disabled on the CD-ROM drive, locate and double-click `setup.exe` on the CD.
3. Follow the instructions on the window to complete the installation.

Command View TL is essentially a web server that hosts a GUI interface to web clients. Command View TL runs on the management station as a service. By default, this service starts automatically whenever the management station is booted, and runs invisibly in the background. In most cases, the default installation settings are adequate.

If you need to stop Command View TL from running on the management station, use the Services applet that is included with Windows. To access the Services applet, select Start > Settings > Control Panel > Administrative Tools > Services and locate the Command View TL service in the list. Use the Services applet to start and stop services, and to set whether the service is started automatically when the computer is booted. See the online help that comes with the Services applet for more information.

Starting Command View TL

To start Command View TL, open your browser, either on the management station or on a client machine on the LAN, and enter the following URL in the address field:

http://<hostname>:4095/

(where *<hostname>* is the IP address or network name of the management station. If you are starting Command View TL on the management station itself, you can substitute *localhost* for the hostname).

Alternatively, you can start Command View TL from the Windows Start button:

Start > Programs > hp Command View TL > Command View TL

If the Java Runtime Environment (JRE) plugin is not already installed on your computer and you are using a Windows OS, Command View TL attempts to download and install it for you. If you are prompted to install the JRE plugin, click **OK** and follow the instructions on the window. If you are using a non-Windows OS, you are instructed how to download and install the JRE plugin. If the JRE plugin is not available, then Command View TL will not run on that machine.

After the JRE is successfully installed, the Command View TL Launcher window is displayed.
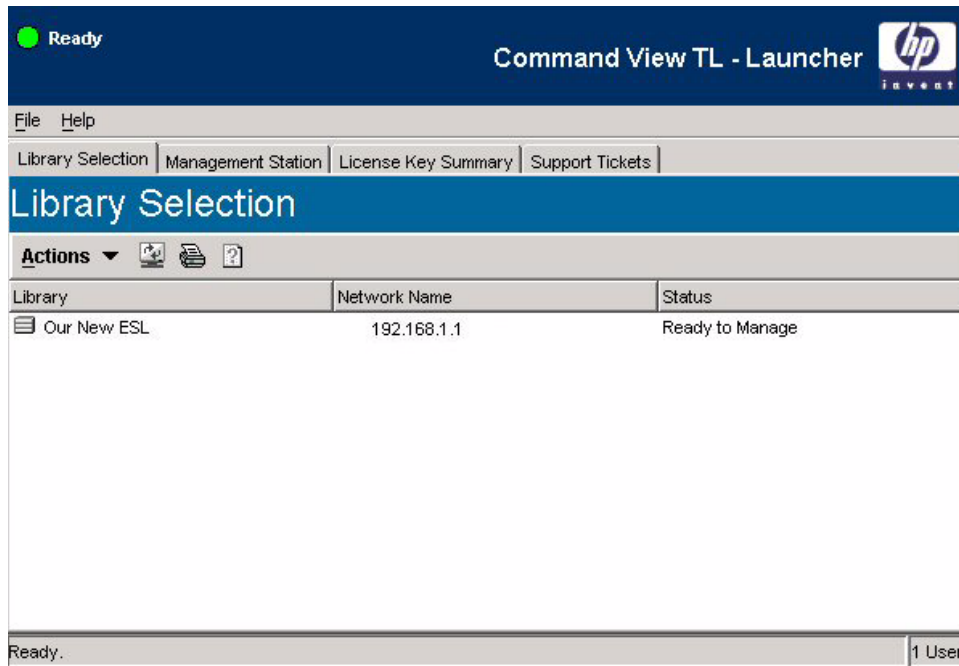
Figure 3 Command View TL Launcher window

Using the Launcher window

The Launcher window is the launching point for all Command View TL operations. A status indicator in the top left section of the window, just above the menu bar, shows the status of the management station and whether or not communication has been established between the client browser and the management station. On other windows, this status indicator shows the status of the currently selected library.

The Launcher window has the following three tabs:

- Library Selection tab—Displays a list of libraries that can be managed by Command View TL. You can add or delete libraries from this list, or select a library to manage.
- Management Station tab—Lets you configure the network settings of the management station.
- License Key Summary tab—Provides a convenient way to track and safely store any additional license keys you have purchased for use with ESL tape libraries.
- Support Tickets tab—Lists all of the support tickets generated by Command View TL.

Navigating Command View TL

Many windows are divided vertically into two panels. The left panel contains a list or a treeview showing a hierarchical structure. The right panel displays further information about items selected in the left panel.

The currently selected library is indicated in the drop-down box below the main menu bar. You can use this drop-down box to change the currently selected library at any time.

Some windows show data in a columnar format. Depending on the data being displayed, you might be able to drill down to more detailed information by:

- Double-clicking an item in the list.
- Right-clicking an item in the list and then selecting an item on the context menu.
- Selecting one or more items in the list and then selecting an item on the Actions menu.
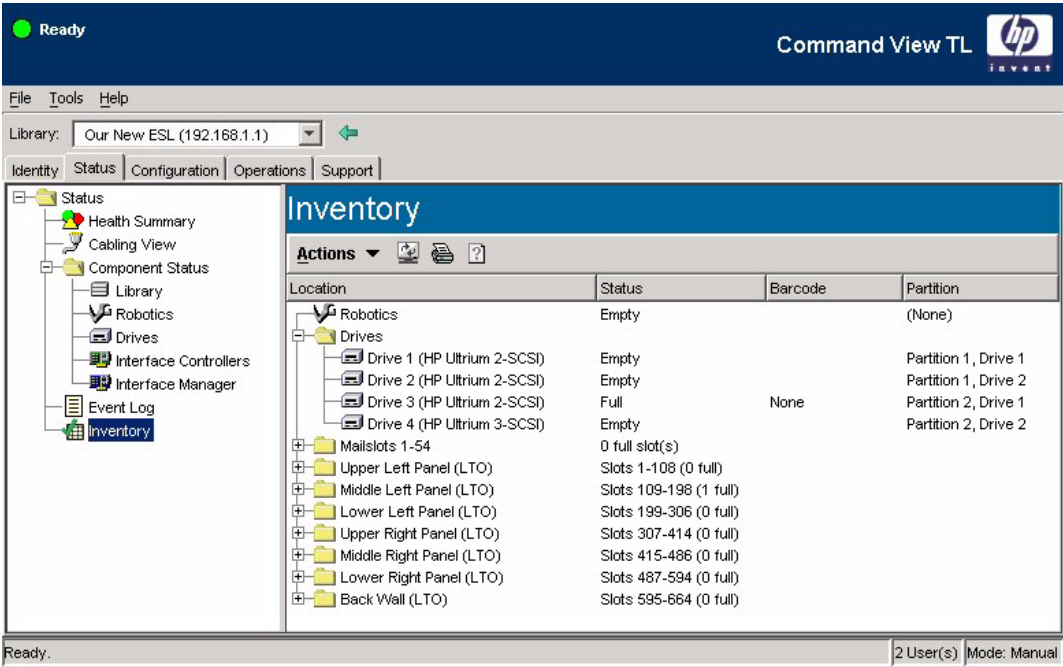
Figure 4 Example of a typical window showing the two-panel format and columnar data

Most windows have an Actions button that, when clicked, displays a menu of actions (the Actions menu) that can be performed from that window or on the selected item. Menu items in bold type show the default action for that window or selected item. Double-click the item to perform the action or right-click an item to display a context menu that duplicates some or all of the menu items in the Actions menu.

CAUTION: Use the various tabs, menus, and buttons throughout the program to navigate. Do not use the browser navigaton buttons. Doing so may cause loss of configuration data entered on a window.

Command View TL uses various toolbar buttons to perform different tasks. These buttons may or may not be available depending on the window you are on. Table 2 lists these buttons and a description of the action performed.

Table 2 Toolbar buttons

Button	Description
Actions ▼	Actions—Displays a menu of available actions for the current window or selected item(s).
←	Return—Returns to the Library Selection tab.
🔄	Refresh—Refreshes the data on the current window.
🖶	Print—Opens the Print dialog box and lets you print the data on the current window to the selected printer.
?	Help—Opens a help topic associated with the current window.

In addition to the tabs and buttons found throughout the program, Command View TL also has a menu bar. These menu items basically duplicate the functionality of the buttons shown in Table 2 and do not require further explanation.

Device numbering conventions

In some instances, Command View TL numbers devices differently than they are numbered on the ESL tape library front panel. For example, if the library contains eight drives, the ESL9000 Series library front panel refers to those drives as drive 0 through 7. Command View TL refers to the same drives as drive 1 through 8.

Table 3 shows the device numbering conventions used by Command View TL and by the ESL tape library front panel (when applicable).

Table 3 Device Numbering Conventions

Device	Command View TL	ESL9000 Series front panel	ESL E-Series front panel
Drives	One-based	Zero-based	One-based
Drive clusters	n/a	n/a	Zero-based *
Slots	One-based	Zero-based	n/a
FC interface controllers	One-based	n/a	n/a
FC host port numbers	Zero-based**	n/a	n/a
SCSI bus numbers	Zero-based**	n/a	n/a

NOTE: * Drive clusters in the ESL E-Series libraries are zero-based, although they are not referred to from the front panel of the library.

NOTE: ** The zero-based numbering of the FC host ports and SCSI busses corresponds to the numbers that are printed on the actual hardware.

Initial configuration steps

After you have successfully installed the Interface Manager card and started Command View TL:

1. Set the administrative password for Command View TL. See Administrative password.
2. Verify that proxy settings for the management station are correct. See Network settings.
3. Add all libraries that will be monitored to Command View TL. See Adding or removing a library.
4. Add the license key for Command View TL and any additional features that you have purchased. See License Key Summary tab.
5. Configure the following for each library. See Configuring a library.
   - Library name
   - System date
   - System time
   - Time zone
   - System contact name
   - System contact phone number
   - System contact pager number
   - System contact e-mail address
   - System location
   - System asset number
6. (Optional) Configure library partitions. Library partitions are configured using Secure Manager. Therefore, this step requires a Secure Manager license. Partitioning the library erases all host access configuration settings. See Partitioning a library.
7. Configure host access (Secure Manager). By default, Secure Manager prevents all hosts from accessing the library. You must configure Secure Manager to allow host access to the library. See Configuring access for a host HBA.

Other common Command View TL functions

The following list provides quick links to several of the most common functions performed by Command View TL:

- Adding or removing a library
- Configuring a library
- Configuring the Fibre Channel interface controllers
- Monitoring device status
- Viewing the event log
- Viewing inventory of the library
- Updating firmware
- Using the License Manager
- Media management

Adding or removing a library

You must add all libraries that will be monitored by Command View TL. The library IP address can be set through the Interface Manager card serial interface or cascade port or, on ESL E-Series libraries, through the library Operator Control Panel (OCP).

> **NOTE:** For more information about getting or setting the library IP address, ESL9000 Series users see "Getting or Setting the Interface Manager IP Address" in the *HP StorageWorks Interface Manager and Command View TL installation guide*. ESL E-Series users should see the *HP StorageWorks ESL E-Series tape library unpacking and installation guide*.

To add a library:

1. From the Library Selection tab of the Launcher window, select **Actions > Add Library** to display the Add Library dialog box.
2. Enter the IP address or hostname of the Interface Manager card in the library to be added, and then click **OK**.

To remove a library:

1. Select the library to be removed.
2. Select **Actions > Remove Library**.
3. On the Confirm Library Removal dialog, click **Yes** to confirm the deletion.

Configuring a library

1. From the Library Selection tab of the Launcher window, double-click the library to configure.
2. Click the **Configuration** tab.
3. To configure the library properties:
   a. Select the **Library Properties** item in the treeview to display properties for the selected library.
      The Library Properties window displays the following groups of information:
      - Library Name
      - System Date/Time
      - Contact Information
   b. Select **Edit Library Name**, **Edit System Date/Time**, or **Edit Contact Information** as needed from the Actions menu.
      A dialog box is displayed allowing you to edit the desired properties.
   c. Make the required changes, and then click **OK**. The library properties are stored in the memory of the Interface Manager card.

4. To configure the network (TCP/IP) settings of the library:

   a. Select the **TCP/IP** item in the treeview to display the TCP/IP configuration window.

   The following information pertaining to the selected Interface Manager card is displayed (only the network settings can be edited):

   - Network Settings
     - Hostname
     - Address configuration
     - IP address
     - Subnet mask
     - Gateway
     - DNS domain name
     - DNS addresses
   - MAC Settings
     - MAC address
     - Link selection

   b. If necessary, obtain the required network settings from your network administrator.

   c. Select **Actions > Edit Network Settings** to display the Network Settings dialog box.

   d. Make the changes as required, and then click **OK**.

Configuring the Fibre Channel interface controllers

1. On the Library Selection tab of the Launcher window, double-click the library hosting the FC interface controllers to be configured.

2. Click the **Configuration** tab.

3. Select the **Connection Properties** item under Interface Settings in the treeview to display the Connection Properties window.

   The first column of this window shows the FC interface controllers that are connected to the Interface Manager card. The FC host ports are shown under their respective FC interface controller.

4. Select an FC host port. In Automatic mode, it does not matter which FC host port is selected because the changes you make apply to all FC host ports. In Manual mode, each FC host port can be configured independently.

5. Select **Actions > Edit Port Connection Settings** to display the Port Connection Settings dialog box.

6. Set the Port Connection Type to one of the following:
   - Fabric (SAN) Attach—Use this connection type when connecting all FC host ports to an FC switch.
   - Direct Attach—Use this connection type when connecting all FC host ports to a Host Bus Adapter (HBA) on a backup server.
7. Set the Port Speed. Use the maximum speed that your SAN infrastructure supports.
8. Click **OK** to save the changes.

Monitoring device status

1. On the Library Selection tab of the Launcher window, double-click the library that you want to monitor.
2. Click the **Status** tab.
3. To view a comprehensive health summary of the library and all its component devices, select the **Health Summary** item in the treeview.

   The first column of the health summary displays each component of the library in a hierarchical treeview. Each component is shown with a green, yellow, or red status symbol that enables you to see if any components need attention. The second column describes the health of the component, and the third column provides additional information that may be useful if there is a problem with the component.

NOTE: The Health Summary window is automatically updated whenever the status of the library changes.

4. To view detailed status of an individual device, in the Component Status group of the treeview, click the icon for the component.

   Relevant information for that component is displayed in the right panel. The information displayed varies depending on the component selected. In the right panel, double-click a component to display component properties.

Viewing the event log

1. On the Library Selection tab of the Launcher window, double-click the desired library.
2. Click the **Status** tab.
3. Click the **Event Log** item in the treeview to display the event log.

   The following information is displayed for each event:

   - Timestamp—Time that the event was recorded.
   - Event Description—Brief description of the event.
   - Source—Device that triggered the event.
   - Severity—Displays one of the following icons indicating the type of the event:
     - ⚠ Critical—May prevent normal operations of the library and must be addressed immediately
     - ◇ Warning—Does not require immediate attention but should be addressed as soon as possible
     - 🟢 Information—Presents information the user should be aware of but does not require immediate attention

4. Double-click an event to display the event in a dialog box. The dialog box displays the same information as shown above.

Viewing inventory of the library

1. On the Library Selection tab of the Launcher window, double-click the desired library.
2. Click the **Status** tab.
3. Select the **Inventory** item in the treeview to display the Inventory window.

For more information about the Inventory window, see Inventory.

Updating firmware

1. On the Library Selection tab of the Launcher window, double-click the desired library.
2. Click the **Support** tab.
3. Select the **Firmware Update** item in the left panel to display the Firmware Update window.

   The first column of the Firmware Update window displays the Interface Manager card and all FC interface controllers, robotics, and drives that are connected to the Interface Manager card. The second column displays the current firmware revision of the corresponding device, and the third

column indicates whether this is the correct firmware revision or a mismatch for the corresponding device.
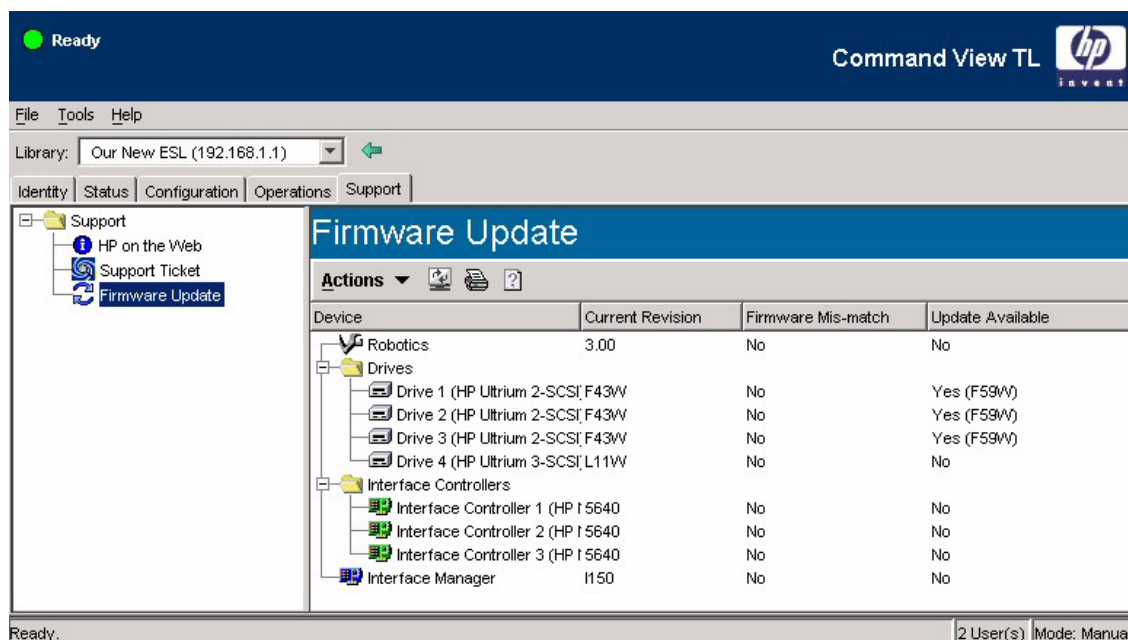
Figure 5 Firmware Update window

Command View TL provides a convenient Firmware Update wizard enabling you to easily manage the firmware revisions of all the components in your library.

⚠ **CAUTION:** Ensure that all applications that try to access the library or drives are shut down until the firmware update is completed. Do not interrupt the firmware update process. Stopping this program or powering down the device during the update could cause the device to be inoperable and require physical repair.

1. Select **Actions > Launch Firmware Update Wizard** to launch the Firmware Update wizard.
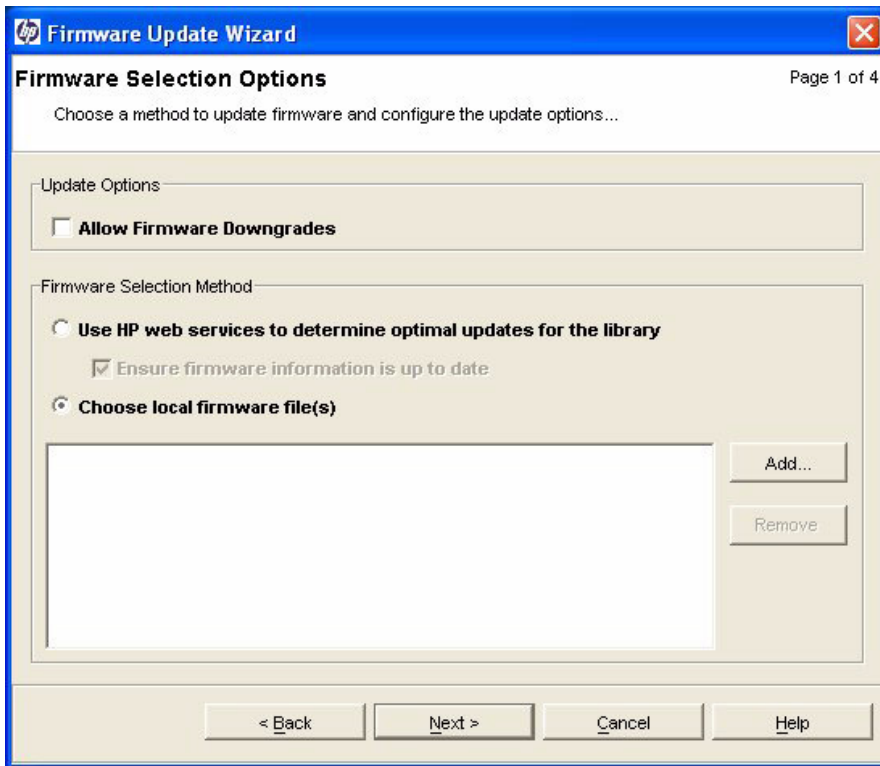
2. Decide whether to allow firmware downgrades. By default, firmware downgrades are not allowed, meaning that only newer firmware versions can be uploaded to your hardware.

   If you need to allow firmware downgrades (if, for example, a newer firmware version is causing problems and you want to revert back to an older version that was known to work properly), select **Allow Firmware Downgrades**.

3. Choose one of the following options:
   - **Use HP web services to determine optimum updates for the library**—This option causes Command View TL to check the HP Support web site for all compatible firmware files. If you select **Ensure firmware information is up to date** (recommended), Command View TL downloads the latest list of supported hardware with current firmware revisions and saves it locally on the management station. This list is updated every 24 hours on the HP Support web site, so checking this option ensures that Command View TL is up-to-date on all the latest firmware revisions.

a. Click **Next** to display the Device Selection window.

b. Proceed to step 4.

- **Choose local firmware file(s)**—This option lets you choose firmware files that are stored locally.

    a. Click **Add** to browse to the firmware file(s). To select multiple files in the same directory, hold down **Ctrl** while selecting the files. Click **Select** to return to the Firmware Selection Method window.

    b. Click **Next** to display the Device Selection window.

4. Select the device(s) to be updated in the left column. The current revision for each device is displayed in the middle column.

5. For each selected device, select the appropriate firmware revision from the drop-down box in the right column.

6. Click **Next** to display the Firmware Update Summary window.

7. Confirm the firmware update selections and select **I understand that this update will cause currently running backups to fail**.

8. Click **Next** to display the Firmware Update Progress window. This window displays the progress of the firmware update. When complete, a dialog box displays the status of the update. Click **OK** to close the dialog box.

9. Click **Finish** to exit the wizard.

Using the License Manager

To access the License Manager, click the **License Key Summary** tab on the Launcher window. See License Key Summary tab for more information.

Library Selection tab

The Library Selection tab displays a list of libraries that can be managed by Command View TL. From this tab, you can add and delete libraries or select a library to be managed. Selecting a library to manage lets you drill down to the individual components or other aspects of the library.

Adding and removing libraries

You must add all libraries that will be monitored by Command View TL. When adding a library, you are actually adding a reference to the Interface Manager card within that library.

1. From the Library Selection tab of the Launcher window, select **Actions > Add Library** to display the Add Library dialog box.

2. Enter the IP address or hostname of the Interface Manager card in the library to be added, and then click **OK**.

NOTE: For each library, the status column displays the name of the management station that is managing the library.

To remove a library:

1. Select the library to be removed.
2. Select **Actions > Remove Library**.
3. In the Confirm Library Removal dialog, click **Yes** to confirm the deletion.

Managing libraries

To manage a library:

1. Select the library to manage.
2. Select **Actions > Manage Library**. Alternatively, you can right-click the desired library and select **Manage Library**.

When you select a library to manage, the currently selected library is displayed in a drop-down box immediately below the main menu bar. Change the currently selected library at any time by selecting a different library from this drop-down box.

NOTE: If you select a library to manage that is already managed by another management station on which Command View TL is installed, a dialog box is displayed asking if you want to reclaim the library.

When a library has been selected for management, a new window is displayed with the following five tabs:

- Identity tab—Displays summary information about the currently selected library.
- Status tab—Displays a treeview in the left panel showing a hierarchical view of the library and its components. The right panel displays status information about the selected item. On the Status tab, you can also view a health summary of the entire library, view an event log, or view the inventory of the library.
- Configuration tab—Lets you configure library properties, interface settings, network settings, and licensed capacity (for those libraries that support it). You can also partition the physical library into multiple logical libraries (using Secure Manager), configure HP StorageWorks Direct Backup Engine, and configure HP StorageWorks Secure Manager (assuming the appropriate licenses have been purchased for those features).
- Operations tab—Provides a convenient way to move media and to reboot the library or individual components of the library.
- Support tab—Provides useful resources for finding support. On the Support tab, you can also update firmware and generate support tickets.

Identity tab

The Identity tab displays summary information and a photo of the currently selected library. This tab is useful when you need to quickly find information pertaining to a library, such as the number of drives or interface controllers it contains. Another use for the Identity tab is finding the library serial number, which is required when ordering any of the optional, licensable features of the ESL Series library (see Advanced features for more information about additional licensable features).

Status tab

The Status tab uses the traditional two-panel interface to show status information about the selected library. The left panel displays a hierarchical treeview of the selected library, and the right panel displays information pertaining to the item selected in the left panel.

The currently selected library is indicated in the drop-down box just below the main menu bar. You can change the currently selected library at any time by selecting a different library from this drop-down box.

The Status tab displays four types of information that can be accessed from the treeview:

- Health summary
- Component Status
- Event log
- Inventory

Health summary

Select the Health Summary item in the tree view to display a comprehensive health summary of the selected library in the right panel. The first column of the health summary displays each component of the library in a hierarchical treeview. Each component is shown with a green, yellow, or red status symbol that enables you to see if any components need attention. The second column describes the health of the component, and the third column provides additional information that may be useful if there is a problem with the component.
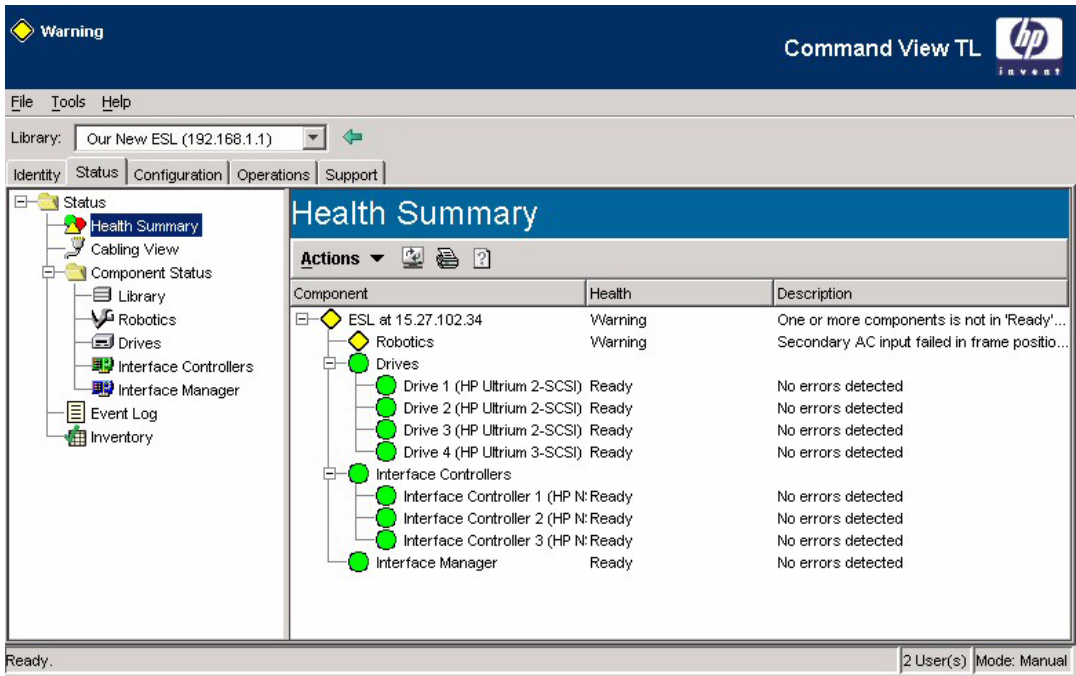
Figure 6 Health Summary window

Cabling view

Devices are displayed hierarchically by physical connection in the Cabling View window, which shows the same information as the Health Summary window.

Figure 7 Cabling View window

Component Status

The Component Status function displays the current status of the following library components individually:

- Library
- Robotics
- Drives
- Interface Controllers
- Interface Manager

Click the icon for the component you want to view status of in the treeview in the left panel. Relevant information for that component is displayed in the right panel. The information displayed varies depending on the component selected.

NOTE: You can double-click a component in the right panel to display properties of the component.

Event log

The following information is displayed for each event in the event log:

- Timestamp—Time that the event was recorded.
- Event Description—Brief description of the event.
- Source—Device that triggered the event.
- Severity—Displays one of the following icons indicating the type of the event:
    - ⚠ Critical—May prevent normal operations of the library and must be addressed immediately.
    - ◇ Warning—Does not require immediate attention but should be addressed as soon as possible.
    - 🟢 Information—Presents information the user should be aware of but does not require immediate attention.

Double-click an event to display the event in a dialog box. The dialog box displays the same information as shown above.

Inventory

The Inventory window shows how tape cartridges are distributed throughout the library.
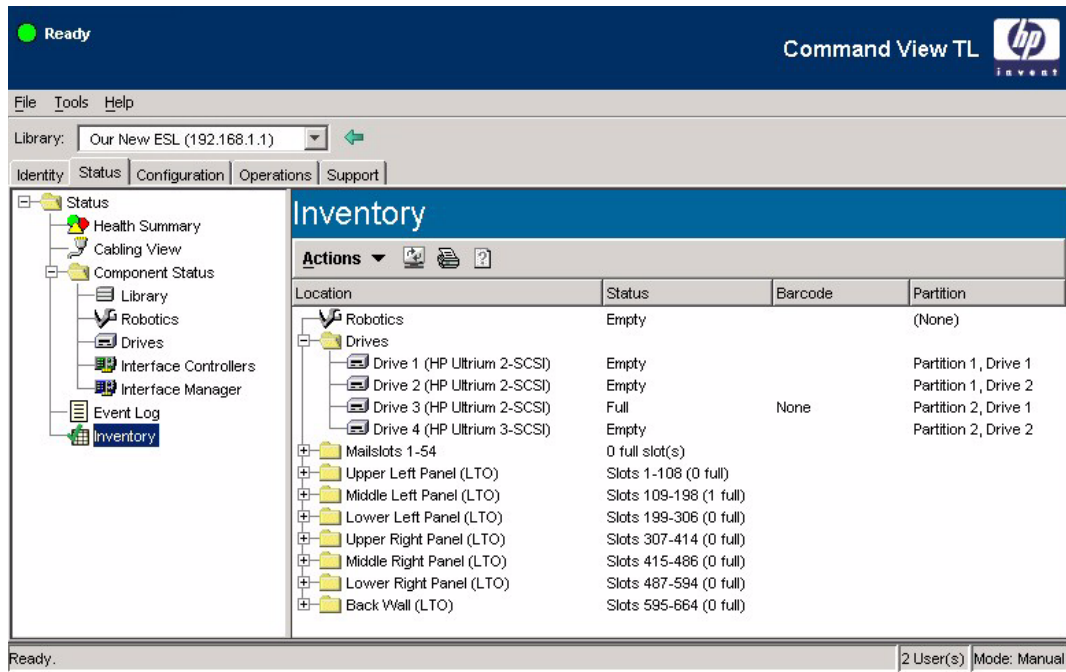
Figure 8 Inventory window

The Location column displays all the possible locations for tape cartridges in treeview format. For simplicity, all of the drives are grouped under the *Drives* folder, mailslots are grouped under the *Mailslots* folder, and slots are grouped in the *Slots* folders. Depending on your library, slots are grouped into the *Slots* folders either in groups of 40, or by the location of the slots in the library (for example, back wall, upper-left panel, and so forth). By default, the *Drives* folder is expanded, and all of the *Slots* folders are collapsed. Click the plus sign (+) to expand a group or the minus sign (-) to collapse a group.

The Status column indicates whether the corresponding location is full (contains a tape cartridge) or empty. If the corresponding location is a group folder, the Status column displays how many locations in that group are full. In the example shown in Figure 8, the folder containing slots 1 through 40 shows that 15 slots are full. To see exactly which slots are full, click the plus sign (+) to expand the group. Each individual slot is then displayed underneath the folder, and the Status column displays Full or Empty for each slot.

For each full location, the Barcode column shows the unique barcode identifier for the tape cartridge in that location. To quickly locate a particular tape cartridge:

1. Select **Actions > Find Barcode** to display the Find Barcode dialog box.
2. Enter the identifier for the tape cartridge you are searching for.
3. If you want the search to be case sensitive, select the **Match case** check box.

4. Click **OK** to perform the search.

If the cartridge you are looking for is found, it is highlighted in the display. If the cartridge is part of a collapsed group, the group is automatically expanded.

The Partition column indicates which partition (if any) the drive, slot, or mailslot is in, along with its position in the partition. For example, if you have created a partition called *Windows* and added drives five and six to the list of drives in that partition, the Partition column would display *Windows, Drive 1* for drive five and *Windows, Drive 2* for drive six. The Partition column displays *None* for non-partitioned items.

Configuration tab

The Configuration tab uses the traditional two-panel interface to show configuration settings for the selected library. The left panel displays a hierarchical treeview of the selected library, and the right panel displays information pertaining to the item selected in the left panel.

⚠ **CAUTION:** Some configuration changes require a reboot of the Interface Manager card. If a reboot is required, a dialog box is displayed allowing you to confirm or cancel the action. To prevent data loss, ensure that all backup jobs are complete before making any configuration changes that require a reboot.

The currently selected library is indicated in the drop-down box just below the main menu bar. You can change the currently selected library at any time by selecting a different library from this drop-down box.

The Configuration tab displays several types of information that can be accessed from the treeview:

- Library properties
- Interface settings
- Host access (Secure Manager)
- Partitioning
- Direct backup
- Network settings
- Licensed Capacity Panel Upgrade for ESL E-Series feature

Library properties

Select the Library Properties item in the treeview to display properties for the selected library. The Library Properties window displays the following groups of information:

- Library Name
- System Date/Time
- Contact Information

To edit the library properties:

1. Select **Edit Library Name**, **Edit System Date/Time**, or **Edit Contact Information** as needed from the Actions menu. A dialog box is displayed allowing you to edit the desired properties.
2. Make the required changes and click **OK**. The library properties are stored in the memory of the Interface Manager card.

Interface settings

The Interface Settings consist of two items:

- Interface Manager mode
- Connection properties

Interface Manager mode

The Interface Manager mode setting controls the behavior of the Interface Manager card and dictates how the FC interface controllers are configured.

In Automatic mode, the Interface Manager card ensures that the library is configured correctly and consistently across all FC interface controllers. In the event of a field-replaceable unit (FRU) replacement, advanced logic is enabled to maintain consistent firmware revisions and to present a consistent device map to backup servers.

In Manual mode, each FC interface controller is configured independently. The Interface Manager card does not provide consistency checking or FRU replacement logic.

⚠ **CAUTION:** HP strongly recommends that you leave the Interface Manager mode set to the default setting of Automatic. Using Manual mode increases the risk of making serious configuration errors and causing hardware conflicts that can severely disrupt the normal operation of the library.

To change the Interface Manager mode:

1. Select the **Interface Manager Mode** item in the treeview to display the Interface Manager Mode window.
2. Select **Actions > Edit Interface Manager Mode** to display the Interface Manager Mode dialog box.
3. Change the mode as required, and then click **OK**.

Connection properties

Select the Connection Properties item in the treeview to display the Connection Properties window. This window displays connection properties for the FC interface controllers. The first column of this window shows the FC interface controllers that are connected to the Interface Manager card. The FC host ports are shown under their respective FC interface controller. The remaining columns display the following information pertaining to the FC host ports:

- World Wide Name
- Connection Type
- Port Mode
- Hard AL-PA
- Speed (Gbps)

Only the connection type and speed of the ports can be set manually. The remaining items are configured automatically by the Interface Manager card. When running in Automatic mode, if you make changes to one FC host port, those changes are applied to all the FC host ports on all the FC interface controllers in the library. In Manual mode, changes apply only to the selected FC host port.

To edit the FC host port settings:

1. Select any FC host port. It does not matter which FC host port is selected because the changes you make apply to all FC host ports.
2. Select **Actions > Edit Port Connection Settings** to display the Port Connection Settings dialog box.
3. Set the Port Connection Type to one of the following:
   - Fabric (SAN) Attach—Use this connection type when connecting all FC host ports to an FC switch.
   - Direct Attach—Use this connection type when connecting all FC host ports directly to a Host Bus Adapter (HBA) on a backup server.
4. Set the Port Speed. Use the maximum speed that your SAN infrastructure supports.
5. Click **OK** to save the changes.

Host access (Secure Manager)

Select the Host Access item in the treeview to display the Host Access configuration window. HP StorageWorks Secure Manager enables advanced security functions to protect your library from disruptive SAN traffic. Basic Secure Manager functions are enabled in every copy of Command View TL, but full-featured functionality must be licensed separately. For more information, see Secure Manager.

Partitioning

Select the Partitioning item in the treeview to display the Partitioning window. From this window, you can partition the physical library into multiple logical libraries. For more information, see Partitioning a library.

Direct backup

Select the Direct Backup item in the treeview to display the Direct Backup configuration window. HP StorageWorks Direct Backup Engine enables fast, serverless backup functionality through the FC

interface controllers and Interface Manager card. Direct Backup must be licensed separately. For more information, see Direct Backup Engine.

Network settings

The network settings consist of two items:

- TCP/IP
- SNMP alerts

TCP/IP

Select the TCP/IP item in the treeview to display the TCP/IP configuration window. The following information pertaining to the selected library's Interface Manager card is displayed:

- Network Settings
  - Hostname
  - Address Configuration
  - IP Address
  - Subnet Mask
  - Gateway
  - DNS Domain Name
  - DNS Addresses
- MAC Settings
  - MAC Address
  - Link Selection

Only the network settings can be edited. To edit the network settings:

1. If necessary, obtain the required network settings from your network administrator.
2. Select **Actions > Edit Network Settings** to display the Network Settings dialog box.
3. Make the changes as required, and then click **OK**.

SNMP alerts

Select the SNMP Alerts item in the treeview to display the SNMP Alerts window.
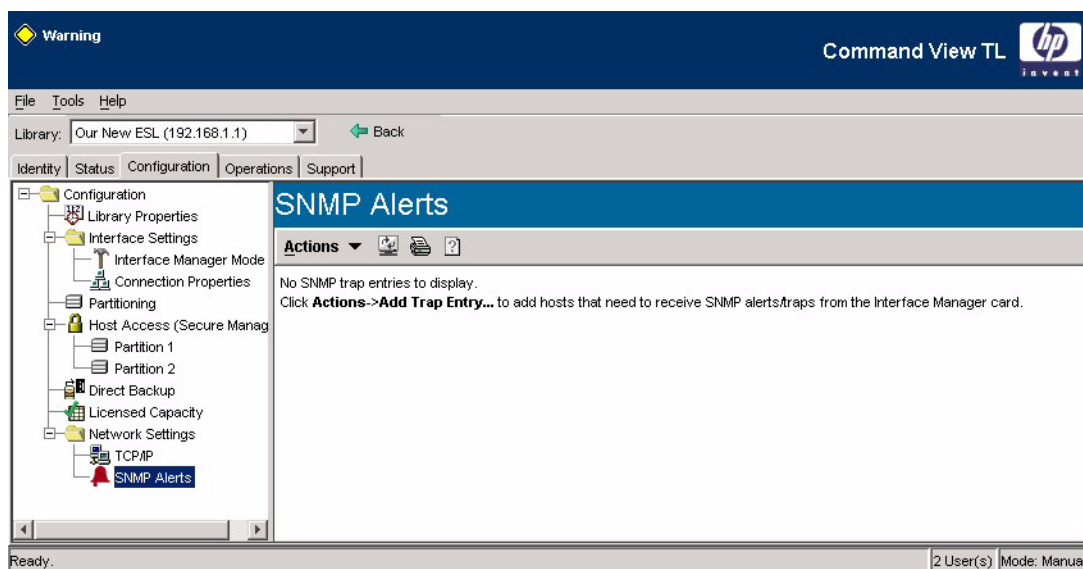
Figure 9 SNMP Alerts window

Simple Network Management Protocol (SNMP) is a well-defined standard of reporting device information through a network. The Interface Manager card has a built-in SNMP agent that supports queries to MIB-II in addition to SNMP traps/alerts.

Command View TL lets you change the following common SNMP settings:

- Trap Destinations—IP addresses of hosts or applications that need to receive SNMP alerts/traps from the Interface Manager card. A trap receiver is an SNMP-enabled machine on the LAN that decodes and logs SNMP traps. Up to eight trap destinations can be specified.
- Community String—Plain-text community string or password required by SNMP clients to read or write SNMP MIB values.

To add a new SNMP trap entry:

1. If necessary, obtain the required network settings from your network administrator.
2. Select **Actions > Add Trap Entry** to display the SNMP Trap Entry dialog box.
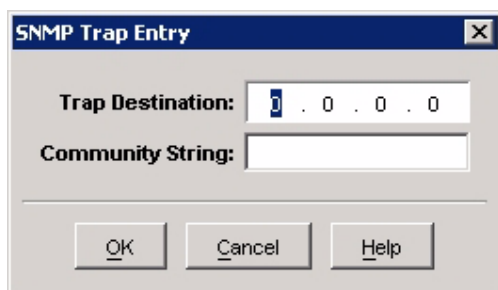
3. Enter the Trap Destination and Community String, and then click **OK**.

To edit an existing trap entry:

1. Select the trap entry to be modified.

2. Select **Actions > Edit Trap Entry** to display the SNMP Trap Entry dialog box.

3. Modify the Trap Destination and Community String as necessary, and then click **OK**.

To remove an existing trap entry:

1. Select the trap entry to be removed.

2. Select **Actions > Remove Trap Entry**.

3. Click **Yes** in the confirmation dialog box to confirm the deletion.

Licensed Capacity Panel Upgrade for ESL E-Series feature

Certain HP StorageWorks tape libraries allow you to license additional capacity as needed. For more information, see Using the Licensed Capacity Panel Upgrade for ESL E-Series feature.

Operations tab

The Operations tab provides functionality for rebooting individual devices or the library itself, and for moving media within a library.

Reboot

Click the Reboot item in the left panel to display the Reboot window. The first column of the Reboot window displays items representing the library, the Interface Manager card, and all FC interface controllers that are connected to the Interface Manager card. The second column provides a specific identifier for each device, and the third column indicates whether or not a reboot is required for the corresponding device.

> ⚠ **CAUTION:** Rebooting a device terminates any operations that device might be performing. To avoid loss of data, ensure that all backup jobs or other operations have completed before attempting to reboot any device.

> **NOTE:** Rebooting the library can take up to 30 minutes.

To reboot a single device:

1. Select the device to be rebooted.

2. Select **Actions > Reboot Selected Component**. Alternatively, right-click the item and select **Reboot Selected Device**.

3. Confirm that you want to reboot the device in the confirmation warning dialog.

To reboot all devices in the list other than the library:

1. Select **Actions > Reboot Interface Manager and All Controllers**.
2. Confirm that you want to reboot all the devices in the confirmation warning dialog.

To reboot all devices that require a reboot (that is, all devices that say *yes* in the *Reboot Required* column):

1. Select **Actions > Reboot All Required Components**.
2. Confirm that you want to reboot all the devices in the confirmation warning dialog.

Media management

Click the Media Management item in the left panel to display the Media Management window. The Media Management window displays three or four columns, depending on whether the library is partitioned or not.
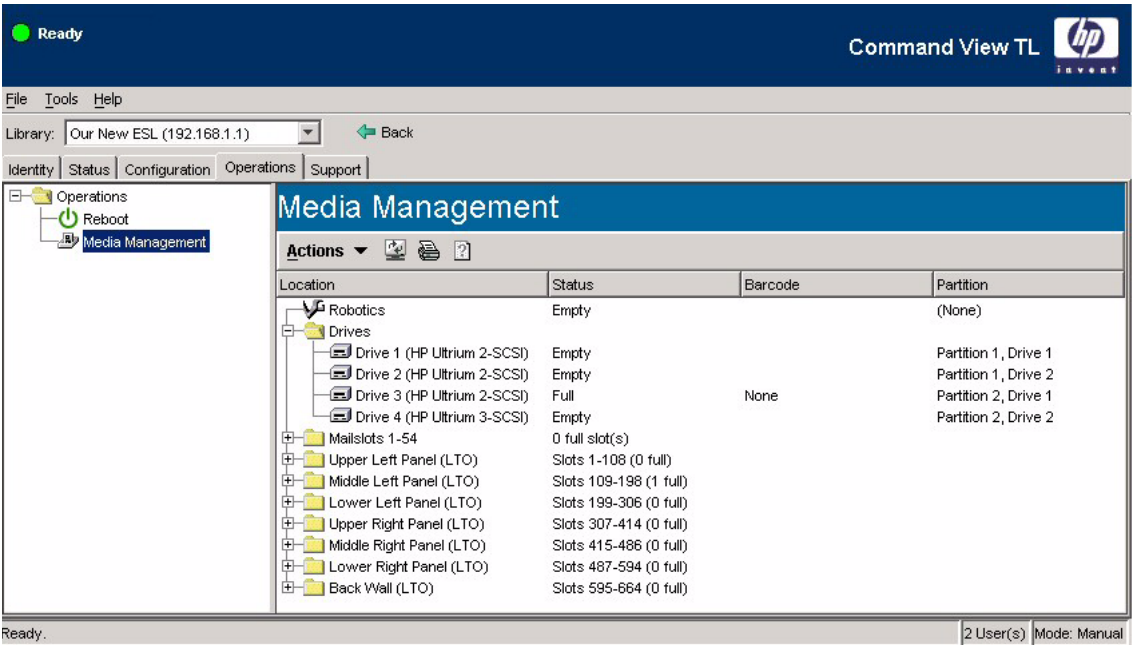
Figure 10 Media Management window

- Location column—Displays the drives, slots, and mailslots available in the library.
- Status column—Indicates whether the corresponding drive, slot, or mailslot contains media (full or empty).
- Barcode column—Displays the barcode identifier of the media if media is present in the corresponding drive, slot, or mailslot.
- Partition column—Displayed only if the library has been partitioned. The column indicates which partition the corresponding drive, slot, or mailslot has been assigned to, and its position in the partition. For example, in Figure 10, drive five is shown as being the first drive in partition one.

Moving media requires that you first select the source location (which must be full), and then select a destination location (which must be empty).

⚠ **CAUTION:** Whenever possible, move media using your backup application. The move media functionality of Command View TL is provided as an alternate means of moving media if you encounter a problem with your backup application or with the library. After using Command View TL to move media, you must re-inventory the library from within your backup application so that the library and backup application remain synchronized.

To move media:

1. Do either of the following to launch the Move Media wizard:
   • Select **Actions > Move Media**.
   • Right-click the source location and select **Move Media**.
2. On the first page of the Move Media wizard, select the source location, and then click **Next**. If you right-clicked the source location in step 1, the source location is already selected.
3. On the second page, select the destination location, and then click **Next**.
4. On the third page, verify that the source and destination locations are correct and read the warning. If you are satisfied with your choices, click the check box to indicate that you understand the warning, and then click **Next** to proceed with the move. If you are not satisfied with your choices, click **Back** to make changes, or click **Cancel** to exit the wizard without performing the move.
5. The final page of the wizard displays progress information. When the move is complete, a dialog box is displayed. Click **OK** to close the dialog box and the Move Media wizard.

Support tab

The Support tab supports the following functions:

• HP on the Web
• Support ticket
• Firmware update

HP on the Web

Select the HP on the Web item in the left panel to display the HP on the Web window. This window displays HP support information.

Support ticket

Command View TL uses an integrated version of HP StorageWorks Library and Tape Tools to generate a support ticket. In the event of a hardware problem, a support ticket can provide vital information to help in diagnosing and resolving the problem. For more information, see Using support tickets.

Firmware update

Select the Firmware Update item in the left panel to display the Firmware Update window. The first column of the Firmware Update window displays the Interface Manager card and all FC interface controllers that are connected to the Interface Manager card. The second column displays the current firmware revision of the corresponding device, and the third column indicates whether this is the correct firmware revision or a mismatch for the corresponding device.
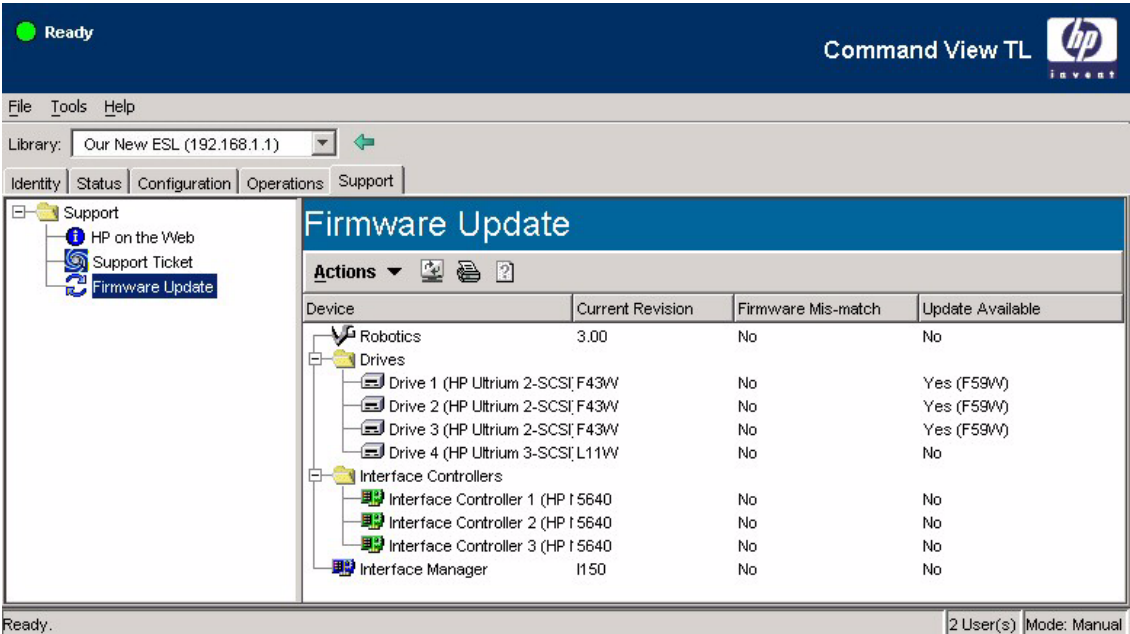
Figure 11 Firmware Update window

Command View TL provides a convenient Firmware Update wizard enabling you to easily manage the firmware revisions of all the components in your library.

⚠ **CAUTION:** Ensure that all applications that try to access the library or drives are shut down until the firmware update is completed. Do not interrupt the firmware update process. Stopping this program or powering down the device during the update could cause the device to be inoperable and require physical repair.

To update firmware:

1. Select **Actions > Launch Firmware Update Wizard** to launch the Firmware Update wizard.
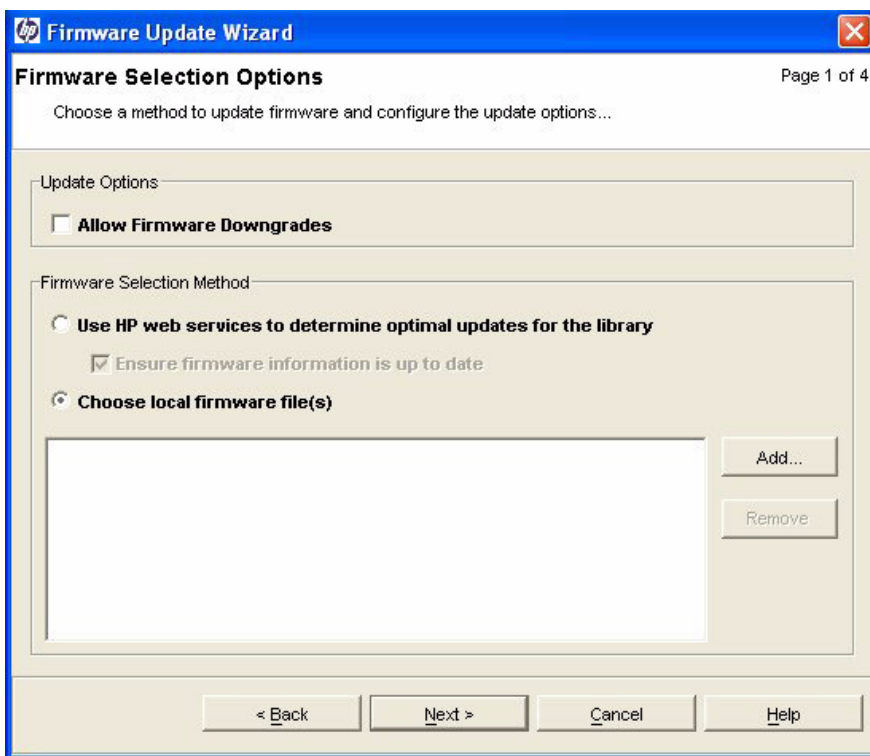
2. Decide whether or not to allow firmware downgrades. By default, firmware downgrades are not allowed meaning that only newer firmware versions can be uploaded to your hardware.

   If you need to allow firmware downgrades (if, for example, a newer firmware version is causing problems and you want to revert back to an older version that was known to work properly), select **Allow Firmware Downgrades**.

3. Choose one of the following options:
   - **Use HP web services to determine optimum updates for the library**—This option causes Command View TL to check the HP Support web site for all compatible firmware files. If you select **Ensure firmware information is up to date** (recommended), Command View TL downloads the latest list of supported hardware with current firmware revisions and saves it locally on the management station. This list is updated every 24 hours on the HP Support web site, so checking this option ensures that Command View TL is up-to-date on all the latest firmware revisions.

a. Click **Next** to display the Device Selection window.

b. Proceed to step 4.

- **Choose local firmware file(s)**—This option lets you choose firmware files that are stored locally.

  a. Click **Add** to browse to the firmware file(s). To select multiple files in the same directory, hold down **Ctrl** while selecting the files. Click **Select** to return to the Firmware Selection Method window.

  b. Click **Next** to display the Device Selection window.

4. Select the device(s) to be updated in the left column. The current revision for each device is displayed in the middle column.

5. For each selected device, select the appropriate firmware revision from the drop-down box in the right column.

6. Click **Next** to display the Firmware Update Summary window.

7. Confirm the firmware update selections and select **I understand that this update will cause currently running backups to fail**.

8. Click **Next** to display the Firmware Update Progress window. This window displays the progress of the firmware update. When complete, a dialog box displays the status of the update. Click **OK** to close the dialog box.

9. Click **Finish** to exit the wizard.

Management Station tab

The Management Station tab displays the network settings of the management station and Command View TL, e-mail settings, and information about the administrative password.

Network settings

To edit the network settings of the management station:

1. Select **Actions > Edit Network Settings** to display the Network Settings dialog box.

2. Set the required proxy settings. If you choose to use proxy settings, enter the web proxy hostname and web proxy port. If necessary, consult your network administrator for this information.

NOTE: Command View TL uses proxy settings to retrieve software and firmware information through the Web. Command View TL attempts to detect the management station proxy settings at startup, but it does not use these proxy settings until instructed to do so.

---

3. Set the web server port. The default setting is 4095, which should not need to be changed. If you do change this value, the new value does not take effect until the next time a GUI is started; the current GUI is unaffected. This value can be viewed in the content pane of the Management Station tab.

4. Set the active IP address for the management station. The active IP address is the one used by the management station to communicate with clients and libraries.

5. Click **OK** to save your changes.

NOTE: Changing the active IP address terminates the current GUI session. To restart the GUI session, enter the new active IP address in the address field of the browser.

E-mail settings

The e-mail settings allow you to specify the SMTP server and the maximum e-mail size. To edit the e-mail settings:

1. Select **Actions > Edit E-mail Settings** to display the E-mail Settings dialog box.
2. Enter the SMTP address in the SMTP Server text box.
3. Specify the maximum e-mail size. E-mails larger than the maximum size are broken up into smaller e-mails.
4. Click **OK** to close the dialog box.

Administrative password

The administrative password prevents unauthorized users from accessing critical Interface Manager and library configurations. The administrative password is disabled by default.

To set the administrative password:

1. Select **Actions > Edit Administrative Password** to display the Administrative Password dialog box.
2. Select the **Require Login Authentication** check box if it is not already selected.
3. If a password was previously set, enter the current password.
4. Enter the new password and then confirm the new password in the respective textboxes.

To disable the administrative password:

1. Select **Actions > Edit Administrative Password** to display the Administrative Password dialog box.
2. Clear the **Require Login Authentication** check box.
3. If a password was previously set, enter the current password.
4. Leave the new password field empty, and then confirm the blank password in the respective textboxes.

License Key Summary tab

The License Key Summary window (on the License Key Summary tab) shows a summary of all the license keys pertaining to the tape libraries that are installed on the system. You can add and delete

license key information from this window. The Interface Manager card and Command View TL software use this information to enable any licensable features that have been purchased.
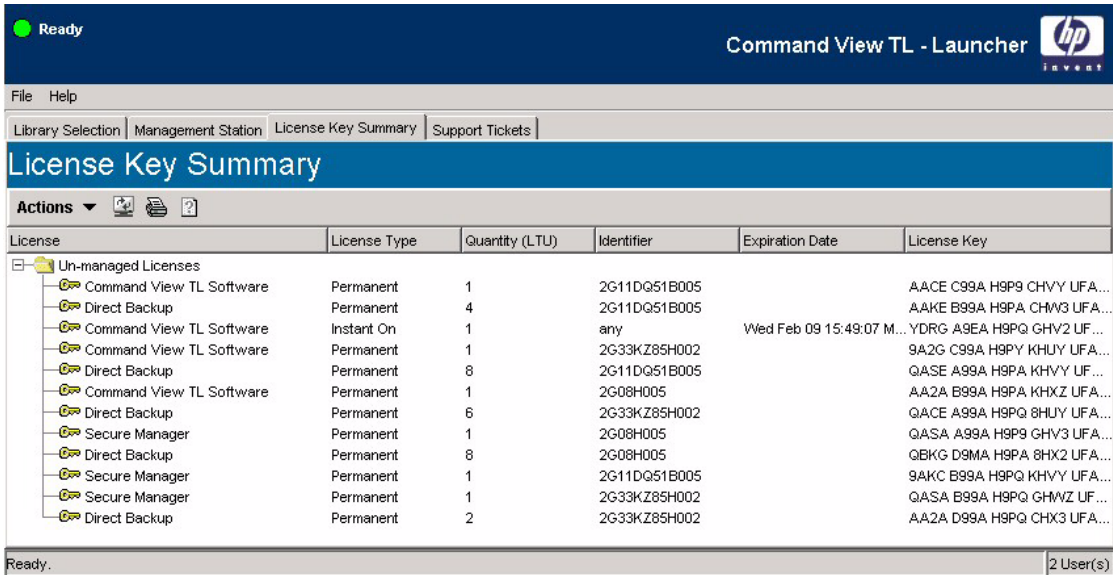
Figure 12 License Key Summary window

The License Key Summary window tracks license keys for the following features:

- Command View TL
- HP StorageWorks Direct Backup Engine
- HP StorageWorks Secure Manager
- Licensed Capacity Panel Upgrade for ESL E-Series

NOTE: Command View TL has an *instant-on* 60-day license. You are entitled to use it for up to 60 days after initial installation, during which time you are required to purchase a license. After the 60 days expires, the program is still functional, but you see a reminder window each time you start the program until you enter a license key.

For more information regarding the additional features and licensing requirements, see Advanced features.

The first column of the License Key Summary window lists all of the installed license keys and groups them into one of the following two groups:

- Interface Manager Licenses—Displays licenses pertaining to libraries that are managed by this management station. One folder (group) exists for each managed library.
- Unmanaged Licenses—Displays licenses pertaining to libraries that are not managed by this management station.

The remaining columns display the following information for each installed license key:

- License Type—Can be one of the following:
  - Permanent license—Has no expiration date.
  - Instant-on license—Allows you to use the feature free of charge up to the expiration date. You must obtain a permanent license to continue using the feature after the expiration date without experiencing a reminder window.
- Quantity (LTU)—Displays the quantity purchased of the specified license.
- Identifier— displays the unique device identifier (library serial number) for that license key.
- Expiration Date—Displays the expiration date, if any, of the license key.
- License Key—Displays the actual license key. License keys are generally too long to fit in this column. To see the entire license key, double-click on the license key to display the License Key Properties dialog box.

Adding or removing a license key

To add a new license key:

1. Obtain the license key from HP. See Obtaining and installing license keys for instructions.
2. From the Library Selection tab of the Launcher window, click the **License Key Summary** tab.
3. Select **Actions > Add New License Key** to display the Add License Key dialog box.
4. Enter the license key in the provided text box, and then click **OK**. The new license key is added to the License Key Summary window.

To remove a license key:

1. Select the license key you want to remove.
2. Select **Actions > Removed Licensed Feature**. The license key is removed from the License Key Summary window.

⚠ **CAUTION:** Removing a license key for an advanced feature might require a reboot of the Interface Manager card. If a reboot is required, a dialog box is displayed allowing you to confirm or cancel the action. To prevent data loss, ensure that all backup jobs are complete before making any changes that might require a reboot.

Support Tickets tab

The Support Tickets tab displays a list of all support tickets generated by Command View TL. Support tickets are grouped by library. From the Actions menu, you can save a support ticket under a different name, view, remove (delete), or e-mail a support ticket. However, you cannot generate a support ticket from this tab.

The Support Tickets tab is similar to the Support Ticket window found on the Support tab of a selected library. The main differences are:

- The Support Tickets tab shows support tickets for all libraries (grouped by library) rather than only the selected library, and you cannot generate new support tickets from this tab.

- The Support Ticket window only displays support tickets pertaining to the selected library. This window also provides access to the Support Ticket Wizard, from which you can generate new support tickets. For more information about using the Support Ticket Wizard to generate support tickets, see Using support tickets.

3 Command line interface

In addition to the Command View TL GUI, the Interface Manager card can be managed via a command line interface (CLI). The CLI provides commands to perform all necessary management functions.

This chapter explains how to initiate a CLI session, the structure of the CLI, and basic navigational techniques. For a comprehensive listing of CLI commands, see CLI Command Reference.

Accessing the CLI

You can access the CLI either through a direct RS-232 connection, or by using Telnet over the LAN.

- Serial—Uses a CLI and connects directly to the Interface Manager card through an RS232 serial interface rather than through the LAN. The serial UI takes precedence over the Command View TL and Telnet UIs and prevents any other open sessions from communicating with the Interface Manager card.

NOTE: If you use Telnet to change the IP address of the Interface Manager card, you must log in to a new Telnet session with the new IP address.

- Telnet—Uses the same CLI as the serial interface, but requires the IP address of the Interface Manager card to initiate the session. This IP address can be set through the Interface Manager card serial interface or cascade port or, on ESL E-Series libraries, through the library OCP. The advantage of using Telnet over the serial interface is that users can Telnet from any client machine that is on the LAN; a separate serial connection is not needed. The Telnet UI has precedence over the Command View TL GUI and prevents any open Command View TL sessions from communicating with the library.

CAUTION: Although an administrator can terminate other sessions by opening a serial or Telnet session, HP does not recommend this. If, for example, someone is performing a firmware upgrade using a Command View TL session and that session is terminated prematurely, the firmware upgrade would fail and render the device being upgraded unusable.

Starting a serial session

1. Connect the management station or other PC or laptop to the Interface Manager card using the serial cable shipped with the Interface Manager card. See the *Installation* chapter of the *HP StorageWorks Interface Manager and Command View TL installation guide* for instructions on how to connect the cable.

2. Start a terminal emulation program on the PC that you connected to the Interface Manager card in step 1. A variety of programs can be used, but HyperTerminal, included with Microsoft Windows operating systems, is the most common. To start HyperTerminal, select **Start > Programs > Accesories > Communications > HyperTerminal**.

3. Set the communications settings as follows:
   - Port Speed: **9600**
   - Data Bits: **8**
   - Parity: **none**
   - Stop bits: **1**
   - Flow control: **none**

4. At the login prompt, use the following default information:
   - Username: `cliadmin`
   - Password: `clipwd`

NOTE: After initially logging in, you should change your password using the `set mgmt password` command. This command starts an interactive procedure for changing the password.

Starting a Telnet session

You can start a Telnet session with the Interface Manager card in one of two ways:

- Through the LAN—Use any PC on the LAN, including the management station, to Telnet into the Interface Manager card using the network IP address.
- Through the Cascade port—Connect a PC to the Interface Manager card via the cascade port and Telnet into the Interface Manager card using the cascade IP address.

Telnetting through the LAN

From any PC on the LAN, including the management station, do the following:

1. Open a command prompt and enter the following command:

   `telnet <name>`
   where *<name>* is either the IP address or hostname of the Interface Manager card.

2. At the login prompt, use the following default information:
   - Username: `cliadmin`
   - Password: `clipwd`

NOTE: After initially logging in, you should change your password using the `set mgmt password` command. This command starts an interactive procedure for changing the password.

Telnetting through the cascade port

The cascade port of the Interface Manager card has a dedicated IP address that is hardcoded into the Interface Manager card and is completely separate from the network IP address. The cascade port provides a backdoor method for accessing the Interface Manager card and making configuration changes, such as getting or setting the network IP address.

1. Connect a standard RJ-45 Ethernet cable from the network port of the PC or laptop to the cascade port of the Interface Manager card.
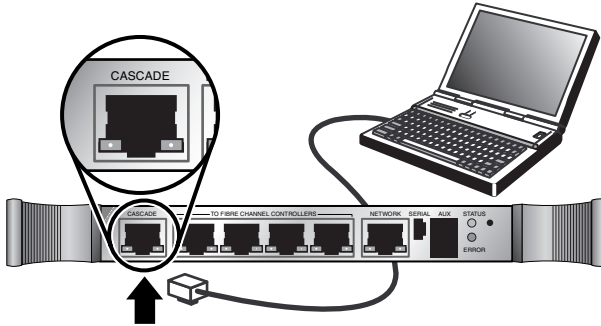
2. Open a command prompt and enter the following command:

   ```
   telnet 192.168.2.1
   ```

NOTE: The above IP address is hardcoded into the Interface Manager card and is completely separate from the network IP address.

3. At the login prompt, use the following default information:
   • Username: `cliadmin`
   • Password: `clipwd`

NOTE: After initially logging in, you should change your password using the `set mgmt password` command. This command starts an interactive procedure for changing the password.

Command syntax structure

> **NOTE:** Many command line examples are given throughout this chapter. To help differentiate between the command prompt and the actual commands that are entered, the prompt portion of the command line is shown in red text. For example, if the documentation says to enter the following command:
>
> *<user>*/set/mgmt > clock
>
> you would type only the word clock. Do not type the text shown in red.

The command prompt has the following format:

> *<user>/<command_level> >*

<user> indicates the CLI user name and *<command_level>* indicates the current command level. For example, when you first log in to the CLI with your CLI username and password, you see the following root-level prompt:

> *<user>/ >*

The root command level offers all of the basic and operational commands. To change command levels, enter any command that is available from the current command level. For example, from the root command level, if you enter the set command to change to the set command level, the following prompt is displayed:

> *<user>*/set >

All of the set commands are directly available at this level.

Using command sequences

You can change to any command level by specifying a sequence of command levels. A command sequence contains each command level name separated by a space. For example, to get to the mode command level of the set command level, you could either enter set mode from the root command level or mode from the set command level:

> *<user>*/ > set mgmt
> *<user>*/set/mgmt >

- Or -

> <user>/ > set
> *<user>*/set > mgmt
> *<user>*/set/mgmt >

To execute a command that is available at a particular command level, either change to that command level and enter the command, or enter a command sequence followed by the command name. For example, if you were at the root command level and wanted to use the clock command

available at the `show mgmt` command level, you could do either of the following (in this example, output of the `clock` command has been omitted):

```
<user>/ > show mgmt clock
<user>/ >
```

- Or -

```
<user>/ > show mgmt
<user>/show/mgmt > clock
<user>/show/mgmt >
```

NOTE: Executing a command does not change the current command level.

Abbreviating commands

All commands can be abbreviated provided that the abbreviation is unique. For example, from the root command level, `se mo` is equivalent to `set mode`. However, `se m` is ambiguous because `m` at the root command level could mean either `mgmt` or `mode`.

Device numbering conventions

In some instances, Command View TL numbers devices differently than they are numbered on the ESL tape library front panel. For example, if the library contains eight drives, the ESL9000 Series library front panel refers to those drives as drive 0 through 7. Command View TL refers to the same drives as drive 1 through 8.

Table 4 shows the device numbering conventions used by Command View TL and by the ESL tape library front panel (when applicable).

Table 4   Device Numbering Conventions

Device	Command View TL	ESL9000 Series front panel	ESL E-Series front panel
Drives	One-based	Zero-based	One-based
Drive clusters	n/a	n/a	Zero-based *
Slots	One-based	Zero-based	n/a
FC interface controllers	One-based	n/a	n/a
FC host port numbers	Zero-based**	n/a	n/a
SCSI bus numbers	Zero-based**	n/a	n/a

NOTE: * Drive clusters in the ESL E-Series libraries are zero-based, although they are not referred to from the front panel of the library.

NOTE: The zero-based numbering of the FC ports and SCSI busses corresponds to the numbers that are printed on the actual hardware.

Navigating the CLI

The CLI is case-sensitive. Enter all commands and keywords in lower case. User-defined strings, such as names or description,s may be any case, including mixed case. Case information for user-defined strings is preserved in the configuration.

The CLI provides the following basic commands:

Table 5   Basic commands

Command	Description
show	Display configuration, status, and log information.
set	Set or change configurable values.
add	Add an item to a list.
delete	Delete an item from a list.
save	Save the current configuration or logs.
restore	Restore saved or factory default configurations.
setup	Run the Configuration Wizard.
download	Download firmware.
reboot	Reboot devices.

Table 6 shows additional operating commands provided by the CLI.

Table 6 Operational commands

Command	Description
home	Move to the root command level.
up	Move up one command level.
help	Display help text for a particular command.
exit	Terminate the current management session.

The CLI also provides a command history that stores the last ten entered commands. Use the up and down arrow keys to scroll through the list of previous commands. For a complete listing of CLI commands, see CLI Command Reference.

Interface Manager mode

The Interface Manager mode setting controls the behavior of the Interface Manager card and dictates how the FC interface controllers are configured.

In Automatic mode, the Interface Manager card ensures that the library is configured correctly and consistently across all FC interface controllers. In the event of an FRU replacement, advanced logic is enabled to maintain consistent firmware revisions and to present a consistent device map to backup servers.

In Manual mode, each FC interface controller is configured independently. The Interface Manager card does not provide consistency checking or FRU replacement logic. Manual mode is intended for experienced personnel only.

△ **CAUTION:** HP strongly recommends that you leave the Interface Manager mode set to the default setting of Automatic. Using Manual mode increases the risk of making serious configuration errors and causing hardware conflicts that can severely disrupt the normal operation of the library.

To change the Interface Manager mode, enter the following command:

```
<user>/ > set mode {auto|manual}
```

When switching between modes, the current command level is changed to the root command level for that mode. When changing from Manual mode to Automatic mode, many of the manual configuration changes made in Manual mode will be lost.

Common CLI functions

The following list provides quick links to several of the most common functions performed in the CLI.

- Using the Setup Wizard
- Configuring a library
- Configuring the FC interface controllers

- Monitoring device status
- Generating Interface Manager and FC interface controller logs
- Updating firmware
- Generating support tickets from the CLI
- Using Secure Manager functions

Using the Setup Wizard

The Setup Wizard takes you through a series of prompts that allow you to perform all of the configuration steps necessary to get the system running.

For more information, see `setup`.

Configuring a library

Use the following commands to configure library properties:

- `set system assetnumber`
- `set system contact email`
- `set system contact name`
- `set system contact phone`
- `set system contact pager`
- `set system location`
- `show system info`
- `show system status`

Use the following commands to configure TCP/IP settings:

- `set network ipaddress`
- `set network dhcp`

Configuring the FC interface controllers

Use the following commands to configure the port settings:

- `set interface hostport alpa`
- `set interface hostport connection`
- `set interface hostport mode`
- `set interface hostport speed`

Monitoring device status

The CLI provides several commands to monitor device status. The status shown is a snapshot of device status at the moment the command was executed. After the status is displayed by the CLI, it does not refresh. To refresh the status information, execute the command again.

Use the following commands to show the status of the corresponding device:

NOTE: In the `show mgmt status` command, **mgmt** refers to the Interface Manager card.

- `show drive status`
- `show interface status`
- `show library status`
- `show mgmt status`
- `show robotics status`

Generating Interface Manager and FC interface controller logs

The following two commands generate a log file for the Interface Manager card or the FC interface controller respectively. The log file is saved in the memory of the Interface Manager card and is accessible through anonymous ftp.

- `save mgmt log`
- `save interface log`

NOTE: When a log file is generated, it is given a set filename depending on the type of log (see Table 7). Each time a log file is generated, it overwrites the previous log file having the same filename.

The logs are available via anonymous ftp. To access the log file via ftp:

1. On any PC connected to the LAN, open a command shell.
2. Navigate to the directory that you want to transfer the log file to.
3. Enter the following command:

   `ftp <ipaddress>`

   where `<ipaddress>` is the IP address of the Interface Manager card.

4. Log in with the following credentials:
   - User name: `ftp`
   - Password: Use your e-mail address

   After logging in, a command shell opens displaying the anonymous ftp directory.
5. If necessary, use the `ls` command to list the contents of the ftp directory.
6. Enter the following command to turn on binary transfer mode:

   `bin`
7. Enter the following command to copy the log file to the directory that you navigated to in Step 2:

   `get <filename>`

   The filename is determined by the type of log file you are retrieving.

Table 7 Log file types and filenames

Type of Log	Filename
FC interface controller event log	`IF_EVENTLOG.XML`
FC interface controller stats log	`IF_STATS.TXT`
FC interface controller trace log	`IF_TRACE.TXT`
Interface Manager card event log	`EventLog.xml`
Interface Manager card trace log	`TraceLog.xml`
Interface Manager card history log	`ArchiveLog.xml`

8. Use the `quit` command to logoff the ftp session.

Updating firmware

You can use the CLI to update the firmware of the Interface Manager card and other library hardware. This procedure involves three steps:

1. Acquire the latest firmware from http://www.hp.com and save it to a temporary location.
2. Use ftp to transfer the firmware file to a temporary storage area in the Interface Manager card memory:
   a. Open a command shell on any PC connected to the LAN.
   b. Navigate to the directory where the firmware you downloaded in step 1 is located.
   c. Enter the following command:

      `ftp <ipaddress>`

      where `<ipaddress>` is the IP address of the Interface Manager card.
   d. Log in with the following credentials:
      - User name:`ftp`
      - Password: Use your e-mail address
   e. After logging in a command shell opens, displaying the anonymous ftp directory.

f. If necessary, use the `ls` command to list the contents of the ftp directory.

g. Enter the following command to turn on binary transfer mode:

   `bin`

h. Enter the following command to copy the firmware file to the temporary location in the Interface Manager card's memory:

   `put <filename>`

   where `<filename>` is the filename of the firmware file.

i. Use the `quit` command to logoff the ftp session.

3. Execute one of the following commands to download the firmware file from the Interface Manager card memory to the appropriate device:

   - download drive
   - download interface
   - download library
   - download mgmt

NOTE: In the `download mgmt` command, **mgmt** refers to the Interface Manager card.

NOTE: Firmware files have a special header that prevents them from being downloaded to the wrong type of device. If the Interface Manager card detects an incorrect firmware type when you execute any of the download commands, it notifies you of the problem and deletes the firmware file from the temporary storage location in the card memory.

Generating support tickets from the CLI

The Interface Manager card can generate a support ticket for various library components.

You can generate a support ticket for drives, FC interface controllers, the library itself, and the Interface Manager card. The command used specifies the type of support ticket to be generated.

1. Execute one of the following commands, depending on the type of support ticket to be created:

   - save drive lttsupportticket
   - save interface lttsupportticket
   - save library lttsupportticket
   - save mgmt lttsupportticket

NOTE: In the `save mgmt lttsupportticket` command, **mgmt** refers to the Interface Manager card.

The Interface Manager card generates the file `sticket.ltt` and stores it in a temporary location in the Interface Manager card memory.

2. Use ftp to retrieve the `sticket.ltt` file and copy it to a location on your PC or network:

NOTE: Each time a support ticket is generated, it uses the same filename (`sticket.ltt`) and overwrites the previous support ticket.

---

    a. On any PC connected to the LAN, open a command shell.

    b. Navigate to the directory that you want to store the support ticket in.

    c. Enter the following command:

        `ftp <ipaddress>`

        where `<ipaddress>` is the IP address of the Interface Manager card.

    d. Log in with the following credentials:

        • User name: `ftp`

        • Password: Use your e-mail address

    e. After logging in, a command shell opens displaying the anonymous ftp directory.

    f. If necessary, use the `ls` command to list the contents of the ftp directory.

    g. Enter the following command to turn on binary transfer mode:

        `bin`

    h. Enter the following command to copy the firmware file to the temporary location in the Interface Manager card memory:

        `get sticket.ltt`

        The file is copied to the directory you navigated to in step 2b.

    i. Enter `quit` to logoff the ftp session.

3. Use HP StorageWorks Library and Tape Tools (L&TT) to view the support ticket. You can acquire L&TT at the following website:

http://www.hp.com/support/tapetools

See the documentation included with L&TT for instructions on how to view a support ticket.

Using Secure Manager functions

Secure Manager gives the library administrator control over which drives in the library can be accessed by the various backup hosts on the SAN. There are two levels of Secure Manager implemented with the Interface Manager card:

• Basic Secure Manager—Does not require a license key and is automatically activated. With basic Secure Manager, you can configure whether or not a particular host Host Bus Adapter (HBA) can access the library. However, basic Secure Manager does not allow you to control whether a particular host HBA can see individual components within the library. Basic Secure Manager provides an all or nothing level of control. Basic Secure Manager is accessible through the CLI.

• Advanced Secure Manager—Requires Command View TL to use and is not available through the CLI. See Secure Manager for more information.

Accessing basic Secure Manager through the CLI

You can use the CLI to map a Host Bus Adapter (HBA) of a backup host to the library. When you map a host, you give it full access to the entire library. When you unmap a host, you deny it access to the entire library.

To map a host:

1. Use the following command to show a list of all hosts that are known by the system:

   `show host info`

   This command lists all known hosts and assigns each one a host number. You need the host number to map the host.

   The Interface Manager card keeps track of all hosts that attempt to access the library. Some hosts in the SAN might not be recognized by the Interface Manager card. If a host that you need to map is not recognized by the system, use the following command to add the host:

   `create host <nodewwn> <hostname>`

   The arguments for the `create host` command are as follows:

   - *<nodewwn>*—Specify the node world wide name. World wide names are specified as 16 hex digits. For example, *1234567890ABCDEF* is a well-formed world wide name. This operand is required.
   - *<hostname>*—Specify the name of the host. The host name may contain letters, numbers, and '_' characters. The maximum length for a host name is 19 characters. This operand is required.

   After creating a new host, use the `show host info` command to determine the host number of the new host.

2. Use the following commands to map or unmap a host, respectively:

   - `map host <host number>`
   - `unmap host <host number>`

   where *<host number>* is the number of the host you want to map or unmap, determined in step 1.

4 Advanced features

The Interface Manager card supports optional features that can be licensed separately:

- HP StorageWorks Direct Backup Engine—This feature provides a direct or serverless backup solution that streams data directly from an HP disk array to a tape drive in the library without sending data through an application server. The Interface Manager card is required to activate this feature.
- HP StorageWorks Secure Manager—This feature has two main functions:
  - Host Access—Gives the library administrator control over which libraries or drives within a library may be accessed by the various backup hosts on the SAN.
  - Library Partitioning—(Advanced Secure Manager only) Enables the library administrator to divide the physical library into multiple, logical libraries.
- HP StorageWorks Licensed Capacity Panel Upgrade for ESL E-Series—With certain tape libraries, additional capacity can be licensed as needed. The Licensed Capacity Panel Upgrade for ESL E-Series feature enables you to enter a license key to unlock this additional capacity.

Other functionality described in this chapter includes:

- Obtaining and installing license keys
- Using support tickets

Direct Backup Engine

HP StorageWorks Direct Backup Engine provides a direct or serverless backup solution that streams data directly from an HP-supported disk array to a tape drive in the tape library without sending the data through the application server. This greatly improves performance and eliminates the need for backup servers to keep up with increasingly powerful tape drives.

With the traditional backup method, the backup host server requests the data from the disk array and then resends the data back out to the appropriate tape drive in the library. With Direct Backup, the backup application on the backup host server sends a command directly to a FC interface controller in the tape library. The FC interface controller then requests data directly from the disk array and sends that data directly to the appropriate tape drive. This process is repeated until the backup job is complete.

Requirements

The following requirements must be met to use Direct Backup:

- HP StorageWorks ESL9000 Series or ESL E-Series tape library, operating in a SAN environment, with the following hardware installed:
  - Interface Manager card
  - Up to four (with ESL9000 Series) or six (with ESL E-Series) e2400, e2400-FC 2G, or e2400-160 FC interface controllers
- Backup application software that supports serverless backup
- HP disk array

- One or more valid Direct Backup license keys must be installed for each library using Command View TL. Each tape drive that will use Direct Backup must be covered by the LTU (license to use) quantity for each license key. For example, if you have two license keys and one license key has an LTU quantity of four and the other has an LTU quantity of two, a total of six drives can use Direct Backup. See Obtaining and installing license keys for more information.

Using Direct Backup

Before using Direct Backup, you must obtain and install the license key. See Obtaining and installing license keys for more information.

Configuring the SAN to work with serverless backup is beyond the scope of this documentation. Many of the SAN requirements depend on the backup application used. For instructions on how to set up and use serverless backup, see your backup application documentation.

Enabling Direct Backup on tape drives

Before you can use Direct Backup, you must first indicate which drives will use the feature. The number of drives that can use Direct Backup is determined by the LTU quantity of the license key or keys enabling Direct Backup.

⚠ **CAUTION:** Changing the Direct Backup drive configuration might require a reboot of the Interface Manager card. Ensure that no backup operations are in progress before proceeding.

1. Start a Command View TL session. See Starting Command View TL for instructions.
2. On the Library Selection tab of the Launcher window, double-click the desired library.
3. Click the **Configuration** tab.
4. Select the **Direct Backup** item in the treeview to display the Direct Backup window.
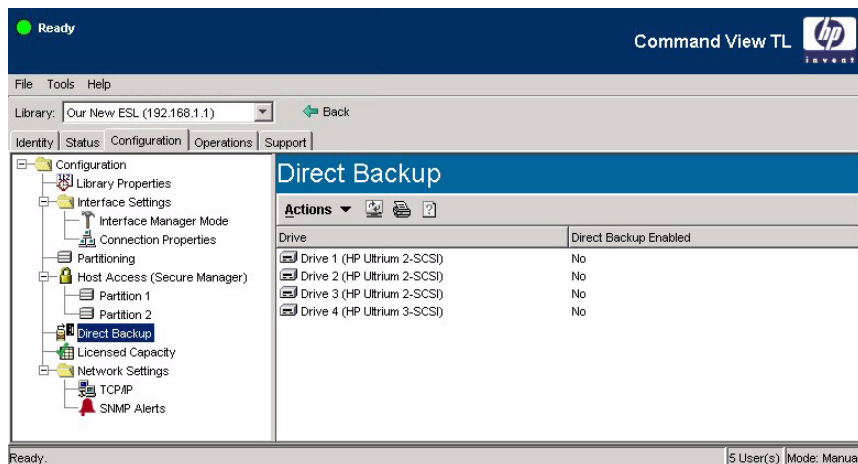
The Direct Backup window displays a list of drives and whether Direct Backup is enabled for each drive.

5. Select **Actions > Edit Direct Backup** to display the Direct Backup dialog box.
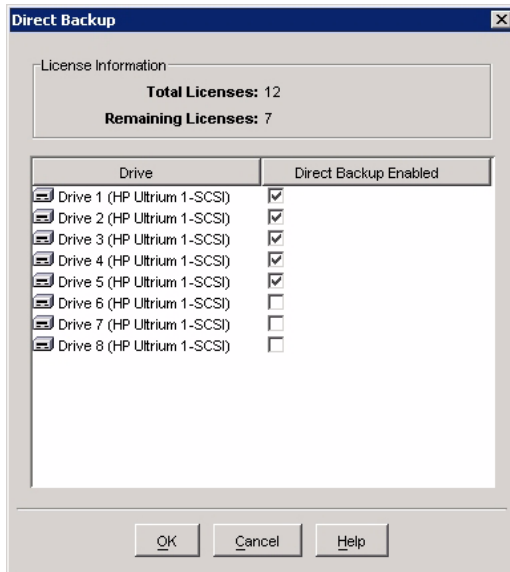
6. Select the check box for each drive to enable Direct Backup on that drive. The total licenses and remaining licenses are displayed at the top of the dialog box. The number of remaining licenses is updated each time you select or deselect a check box. If you exceed the total number of licenses, you will not be able to save the configuration.

7. Click **OK** to save the configuration.

Secure Manager

Secure Manager gives the library administrator control over which devices in the library (drives and robotic controller) may be accessed by the various backup hosts on the SAN. Access can be configured for each FC port on an HBA. Each port of a dual-port HBA must be configured separately.

There are two levels of Secure Manager implemented with the Interface Manager card:

• Basic Secure Manager—Does not require a license key and is automatically activated. With basic Secure Manager, you can configure whether or not a particular FC port of a host Host Bus Adapter (HBA) can access the library. However, basic Secure Manager does not allow you to control whether this FC port can see individual components within the library. Basic Secure Manager provides an all or nothing level of control.

• Advanced Secure Manager—Requires a license key before it can be used. Advanced Secure Manager provides the same functionality as basic Secure Manager, but adds more granular control over access.

  With advanced Secure Manager, you can configure which drives in the library each FC port of the host HBA is allowed to access. This level of control effectively partitions the library resources into user-defined zones that can be allocated to certain host HBA FC ports on the SAN, thus reducing the possibility of access conflicts and errors.

In addition to managing host access, Secure Manager also enables the library administrator to partition the physical library into multiple logical libraries.

Requirements

The following requirements must be met to use Secure Manager:

- HP StorageWorks ESL9000 Series or ESL E-Series tape library with the following hardware installed:
  - Interface Manager card
  - Up to four (with ESL9000 Series) or six (with ESL E-Series) e2400, e2400-FC 2G, or e2400-160 FC interface controllers
- A valid license key is required to use Advanced Secure Manager. See Obtaining and installing license keys for more information.

Configuring host access

You must use Command View TL to configure Advanced Secure Manager.

1. Start a Command View TL session. See Starting Command View TL for instructions.
2. From the Library Selection tab of the Launcher window, double-click the desired library.
3. Click the **Configuration** tab.
4. Select the **Host Access (Secure Manager)** item in the treeview to display the Secure Manager window. If the library is partitioned, the partitions are shown as children of the Host Access (Secure Manager) item in the treeview. Click the appropriate partition.
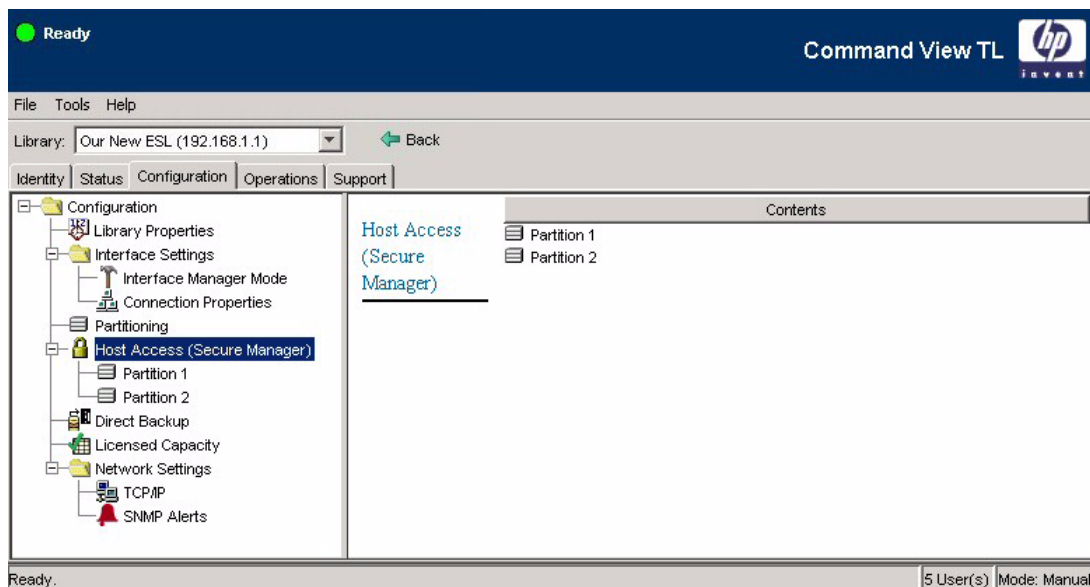
The left column of the Secure Manager window displays a list of host HBAs that have recently logged into the FC interface controllers. The remaining columns correspond to the devices within the library or partition (robotics and drives). A green check in a column indicates that the corresponding host HBA has access to that device. At this point, you have several options:

- Adding or removing a host HBA from the list
- Editing the host HBA alias
- Viewing host HBA properties
- Configuring access for a host HBA
- Viewing the device map

Adding or removing a host HBA from the list

If the host HBA you want to configure is not shown in the list, you must manually add it.

1. Select **Actions > Edit Host/HBA Access** to open the Edit Host/HBA Access dialog.
2. Do one of the following:

   If the host HBA you are adding has already been detected by Command View TL:

   a. Select **Actions > Add Known Host/HBA** to open the Add Known Host/HBA dialog.
   b. Select the host HBA(s) to add, and then click **OK** to return to the Edit Host/HBA Access dialog.

   If the host HBA you are adding is new:

   a. Select **Actions > Add New Host/HBA** to open the Add New Host/HBA dialog.
   b. Enter the name (alias), World Wide Node Name, and World Wide Port Name of the host HBA in the respective text boxes, and then click **OK** to return to the Edit Host/HBA Access dialog.
3. Configure host HBA access. Do one of the following:

   - If you are using Basic Secure Manager, no further configuration is necessary. Click **OK** to close the Edit Host/HBA Access dialog and return to the Secure Manager window. The host HBA you just added is displayed in the list and has full access to all devices in the library.
   - If you are using Advanced Secure Manager, find the host HBA you just added in the list. In the same row, select the check box for each device you want the host HBA to have access to. Click **OK** to close the Edit Host/HBA Access dialog and return to the Secure Manager window. The host HBA you just added is displayed in the list and has access to the devices you specified.

Editing the host HBA alias

To specify a friendly name (alias) for a particular host HBA:

1. Select **Actions > Edit Host/HBA Access** to open the Edit Host/HBA Access dialog.
2. In the Edit Host/HBA Access dialog, select the host HBA to edit and select **Actions > Edit Host/HBA Name** to display the Edit Host/HBA Name dialog box.
3. Enter the desired alias and click **OK** to return to the Edit Host/HBA Access dialog.
4. Click **OK** to return to the Secure Manager window.

Viewing host HBA properties

1. Select the host HBA in the list.
2. Select **Actions > Properties** (or double-click the host HBA name in the list) to display the Host/HBA Properties dialog.

Configuring access for a host HBA

1. Verify that the list contains all of the host HBAs for which you want to configure access. If any host HBAs are missing, see Adding or removing a host HBA from the list for instructions.
2. Select **Actions > Edit Host/HBA Access** to open the Edit Host/HBA Access dialog.
3. For each host HBA, select the check box for each device you want the host HBA to have access to. Click **OK** when finished.

NOTE: If you are using Basic Secure Manager, you cannot specify access to individual devices. For each host HBA, you must either select or deselect all the devices in that row. Remember that Basic Secure Manager provides all or nothing access to the entire library, not specific devices within the library.

NOTE: You can copy the access configuration from one host HBA to another. Select the source host HBA with the configuration you want to copy and press **Ctrl+C** (or click the **Copy** button at the top of the dialog box) to copy the configuration. Then, click the destination host HBA and press **Ctrl+V** (or click the **Paste** button at the top of the dialog box) to copy the configuration.

Viewing the device map

The device map shows how a particular host HBA sees the configuration within a library. The device map displays all of the devices in the library in the first column. The second and third columns display the FC port and LUN information respectively for the corresponding device, as it appears to that host HBA. The device map is displayed in the host HBA Properties dialog.

1. Select the host HBA in the list.
2. Select **Actions > Properties** (or double-click the host HBA name in the list) to display the Host/HBA Properties dialog.

Partitioning a library

Using the advanced version of Secure Manager, you have the option of partitioning the physical library into multiple logical libraries.

When partitioning a library, consider the following:

- If you choose not to partition your library, that is not equivalent to having a library with one large partition. Although you could create one large partition, doing so does not have any benefit. You should either create two or more partitions, or not partition the library at all.
- If you choose to partition your library, you must assign each of the library resources to a partition. Any devices that are not assigned to a partition cannot be seen by backup software.
- A partition must contain at least one drive and one slot. Mailslots are optional.
- Creating and deleting partitions affects host access configuration. Deleting a partition removes mapping information for that partition.
- Partitions cannot be edited after they have been created. To make changes to a partition, you must delete and recreate it.

Adding a partition

1. Start a Command View TL session. See Starting Command View TL for instructions on how to do this.
2. On the Library Selection tab of the Launcher window, double-click the library that you want to partition.
3. Click the **Configuration** tab.
4. Select the **Partitioning** item in the treeview to display the Partitioning window. The Partitioning window displays each partition in the library and shows which mailslots, drives, and slots are assigned to that partition.
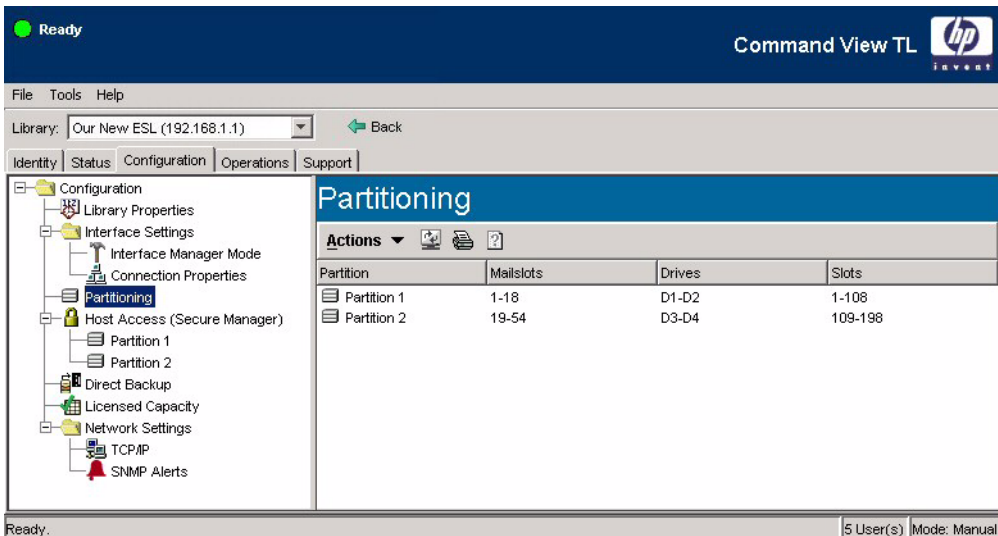
5. Select **Actions > Add Partition** to launch the Add Partition Wizard.
6. Follow the instructions in the wizard to create the new partition. The various windows of the wizard allow you to:
   - Name the partition.
   - Assign drives.
   - Assign mailslots.
   - Assign slots to the partition.
   - Confirm your selections and create the partition.

   Some devices may not be available to add to the partition depending on your library configuration, or if those devices are already assigned to another partition.

Removing a partition

To remove a partition, select **Actions > Remove Selected Partition**.

⚠ **CAUTION:** Devices are unavailable until they are reassigned to another partition, or until all partitions are deleted.

When you remove a partition, any devices that were in that partition must be reassigned to the remaining partitions on the library. Devices are unavailable until they are reassigned to another partition. If you remove all partitions, the library reverts to a non-partitioned state and all devices are available. Any time you add or remove partitions, you must reconfigure host access. For more information, see Configuring host access.

Viewing partition properties

To view the properties of a partition, select **Actions > Properties**, or double-click the partition.

Using the Licensed Capacity Panel Upgrade for ESL E-Series feature

Certain HP StorageWorks tape libraries allow you to license additional capacity as needed. The following HP StorageWorks tape libraries support the Licensed Capacity feature:

- ESL322e
- ESL286e

In the libraries listed above, slots are grouped into panels. When you purchase one of these libraries, panels one, two, and three are enabled by default. You can purchase up to three additional licenses to upgrade the capacity of the library. The first license enables panel four, the second license enables panel five, and the third license enables panels six and seven.

Figure 13 shows the layout of the slot panels in an ESL E-Series tape library and how those panels are numbered/named.
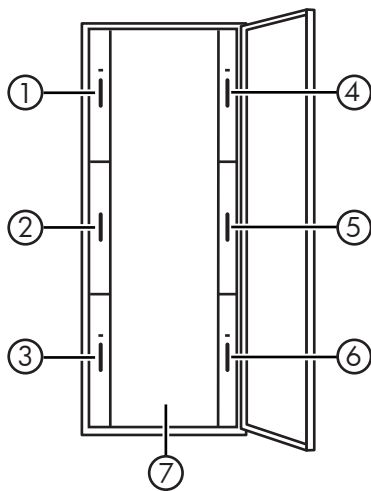
Figure 13 ESL E-Series slot panels

1	Upper left panel	2	Middle left panel
3	Lower left panel	4	Upper right panel
5	Middle right panel	6	Lower right panel
7	Back wall		

Obtaining and installing license keys

1. Purchase the license(s). You may have already purchased the additional licensable features when you ordered the ESL library. If not, visit http://www.webware.hp.com or contact your HP authorized reseller for purchasing information.

   After purchasing the license(s), you receive one or more Software Entitlement Certificates that show the HP order number, the product number and name, and the quantity ordered.

2. Obtain the license key(s). Fill out the required information and follow the instructions on the Software Entitlement Certificate(s) to obtain your license keys. HP generates the license key based on the HP order number and the serial number of the library in which the key will be installed. HP provides you with the license keys via whichever method you specified on the Software Entitlement Certificate (online, e-mail, or fax).

3. Use Command View TL to install the license key(s) for your library. This step is described in detail in the Installing the license keys section.

Installing the license keys

Considerations

Before installing your license keys, consider the following:

- You must use Command View TL to install each license key for the library having the serial number used to obtain the key. The license cannot be installed for a different library.
- License keys cannot be transferred.

Each license key must be installed separately using the License Manager of Command View TL. To install a license key:

1. Start a Command View TL session. See Starting Command View TL for instructions on how to do this.
2. On the Library Selection tab of the Launcher window, click the **License Key Summary** tab.
3. Select **Actions > Add New License Key** to display the Add License Key dialog box.
4. Enter the license key in the provided text box and click **OK**. The new license key is added to the License Key Summary window.

For more information about using the License Manager, see License Key Summary tab.

Installing

Licensing the additional capacity is a two step process:

1. Obtain and install the license key as described in Obtaining and installing license keys.
2. Activate the newly licensed capacity as follows:
   a. Click the **Configuration** tab.
   b. Click the **Licensed Capacity** item in the treeview to display the Licensed Capacity window. This window has three columns. The *Capacity* column shows the groups of slots that can be accessed. The *State* column shows the current state of the license for that group of slots, and the *Description* column displays additional information about that group of slots.

   c. Select **Actions > Enable Pending Capacity**. The *State* column is updated and the newly-licensed capacity is now available.

NOTE: The Licensed Capacity item in the treeview is only visible with libraries that support the Licensed Capacity feature.

Using support tickets

Command View TL uses an integrated version of HP StorageWorks Library and Tape Tools to generate a support ticket. In the event of a hardware problem, a support ticket can provide vital information to help in diagnosing and resolving the problem.

When a support ticket is generated, the program collects configuration information and executes a Device Analysis test on the selected device or devices. This information can then be viewed, saved, or e-mailed. A support ticket is saved as a log file having the `*.ltt` extension.

Generating a support ticket

1. Start a Command View TL session. See Starting Command View TL for instructions.
2. From the Library Selection tab of the Launcher window, double-click the appropriate library.
3. Click the **Support** tab.
4. Select the **Support Ticket** item in the treeview.
5. Select **Actions > Launch Support Ticket Wizard**.
6. On the Support Ticket Wizard Options window, select **Generate a new Support Ticket**.
7. Complete the remainder of the Support Ticket Wizard, specifying a name for the new support ticket and the devices to be included in the support ticket. When the support ticket is complete, it is added to the Support Ticket window.

Viewing a support ticket

Support tickets are displayed in the support ticket viewer. Information is displayed in a standard treeview format. Click the plus (+) and minus (–) signs to expand and collapse sections of the support ticket. Use the standard navigation keys (Home, End, Page Up, Page Down, and the arrow keys), the Windows scroll bars, and the mouse to navigate through the document.

NOTE: The detail level of the support ticket is set to *Everything*. This level cannot be changed.
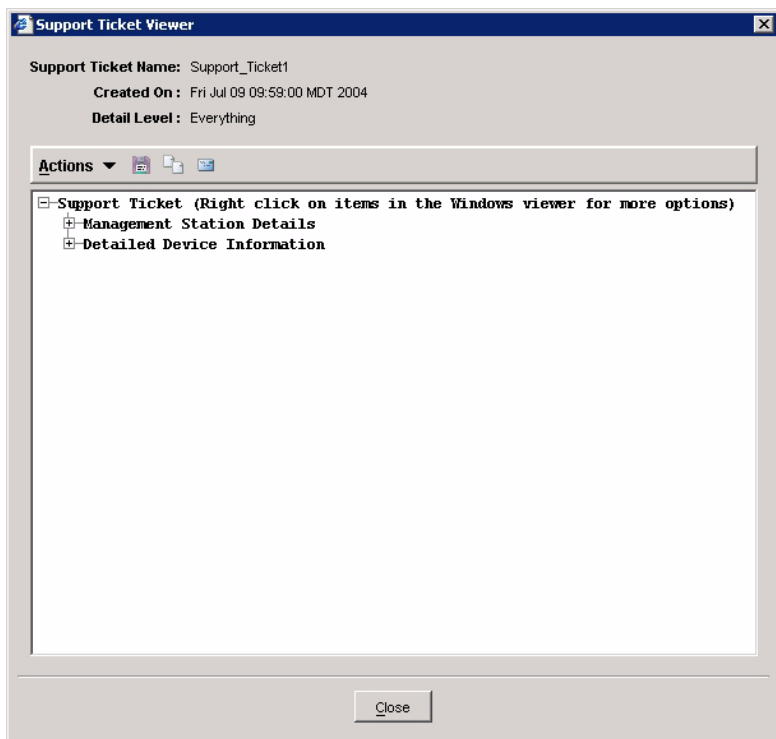
Figure 14 Support ticket viewer

The Actions menu in the support ticket viewer has three items. These menu items are duplicated as toolbar buttons directly to the right of the Actions menu. The functionality of these menu items is as follows:

- Save Support Ticket As—Brings up a standard Save As dialog box so that you can change the name of the support ticket, or save it to a different location.
- Copy to Clipboard—Copies the current line to the Windows clipboard.
- E-mail to HP—Opens the E-mail Support Ticket dialog box that allows you to send the support ticket by e-mail.

Right-click any node (line) in the support ticket viewer to display a context menu that exposes additional functionality. Depending on the node that was clicked, the following items may or may not be available:

- Event Data—Select this item to open the Event Data window, which displays specific information about the event.
- Event Explanation—Select this item to open the Event window, which displays additional information about the event. You can view the the data in either ASCII or hexadecimal format. This feature is available for items preceded with the blue information icon (i).
- Copy to Clipboard—Select this item to copy the current line to the Windows clipboard.

Sending a support ticket by e-mail

To send a support ticket by e-mail, select the support ticket and select **Actions > E-mail Selected Support Ticket** to open the E-mail Support Ticket Wizard.

NOTE: Before Command View TL can e-mail a support ticket, you must have an SMTP server.

The E-mail Support Ticket Wizard has three pages:

1. On page 1, indicate whether this is a new support request or an existing case.
   - If this is an ongoing support case, select the **Send to support provider in reference to an open case** option and enter the case reference number in the appropriate field.
   - If this is a new support request, select the **Send to support provider to request support by e-mail** option (this option is the default). Enter the product number and product serial number in the appropriate fields.
2. On page 2, enter the destination e-mail address. Use the radio buttons to select the support provider, or enter the e-mail address manually. You must also specify the *from* e-mail address.
3. On page 3, enter your company name, contact name, contact phone, and a description of the problem.
4. When you have completed the wizard, click **Finish**.

NOTE: Large support tickets are automatically broken down into multiple, smaller sub-ticket components and sent in multiple e-mails. The master file has an `.ltt` extension, and the sub components have a `.dat` extension. To be viewed properly, the recipient of these e-mails must save all of the sub-ticket components to the same directory. When sending a large support ticket by e-mail, be sure to send all of the components or else the support ticket will be unreadable.

Other support ticket functionality

The Actions menu on the Support Ticket window contains the following items:

- Properties—Displays additional information about the selected support ticket. This is the default action; double-clicking a support ticket automatically displays the properties.
- Save Support Ticket As—Brings up a standard *Save As* dialog box so that you can change the name of the support ticket, or save it to a different location.
- View Selected Support Ticket—Opens the support ticket in the support ticket viewer. See Viewing a support ticket for more information.
- Remove Selected Support Ticket—Removes (deletes) the support ticket.
- E-mail Selected Support Ticket—Opens the E-mail Support Ticket dialog that allows you to send the support ticket by e-mail. See Sending a support ticket by e-mail for more information.

5 Troubleshooting

This chapter lists several common problems and how to resolve them. For additional support, go to the following website:

http://www.hp.com/support/cvtl.

Table 8 ESL9000 Series issues

Symptom	Possible cause	Solution
Command View TL server does not detect the Interface Manager card	Bad network connection	Verify that the Interface Manager card and the management station are correctly connected to the LAN.
	Interface Manager card not powered up or in ready state	Power up the library. Observe status and link LEDs. For a description of LED diagnostic codes, see the *Troubleshooting* chapter of the *HP StorageWorks Interface Manager and Command View TL installation guide*.
	Incorrect IP address	Verify that the correct IP address of the Interface Manager card is entered in Command View TL. 1. See *Getting or Setting the Interface Manager IP Address* in the *HP StorageWorks Interface Manager and Command View TL installation guide* to obtain the correct IP address. 2. See Adding or removing a library to configure Command View TL with the correct IP address.
	Interface Manager card has outdated firmware	Verify that the Interface Manager card has I130 or later firmware.

Table 8 ESL9000 Series issues

Symptom	Possible cause	Solution
Interface Manager card does not detect one or more FC interface controllers	Bad network connection	Verify that the Interface Manager card is properly connected to the FC interface controllers and that the cables are good. See the *HP StorageWorks Interface Manager and Command View TL installation guide* for more information.
	Incorrect firmware revision	Ensure that the FC interface controllers have the latest firmware revision. Check http://www.hp.com/support for the latest firmware for your devices.
	Defective Interface Manager card or FC interface controller	Observe status and link LEDs. Replace defective card or controller. For a description of LED diagnostic codes, see the *Troubleshooting* chapter of the *HP StorageWorks Interface Manager and Command View TL installation guide*.
	DHCP not enabled on the interface controller	DHCP must be enabled on the interface controller before the Interface Manager card can communicate with it. See the interface controller documentation for instructions on enabling DHCP mode. NOTE: HP recommends resetting all interface controllers to their default settings.

Table 8 ESL9000 Series issues

Symptom	Possible cause	Solution
Interface Manager card does not detect drives or library	SCSI cables not connected properly	Check SCSI cabling.
	FC cables (e2400-FC 2G only) not connected properly or damaged	Check FC cables and replace if necessary. Use link LEDs to troubleshoot connections and cable integrity.
	SCSI settings or termination not set properly	• Check the SCSI settings for the device. • Check that the SCSI bus is properly terminated.
	Timing issues	Reset the corresponding FC interface controller.
	Drive not powered up or in ready state	Troubleshoot drive.

Table 8 ESL9000 Series issues

Symptom	Possible cause	Solution
Command View TL does not run in the browser	Incompatible browser version or Java support not enabled	• Ensure you are using a minimum of Microsoft Internet Explorer 6.0 SP1 or later, or Netscape Navigator 6.2 or later. • Ensure that Java support is enabled in the browser.
	Java Runtime Environment (JRE) not installed	Download and install the Java 2 Platform, Standard Edition plugin v1.4.2 or later from the following website: http://www.java.com.
	Bad network connection or network down	• Check all physical network connections. If the connections are good, contact your network administrator. • Ping the management station. If pinging fails and the IP address is correct, contact your network administrator.
	Wrong IP address	Check the IP address of the management station. On the management station, open a command shell and enter `ipconfig`. You must use this IP address (or the network name of the management station) in the URL to access Command View TL.
	Management station not running, or Command View TL service not running on management station	• Check to see if the management station is operational. • Use the Services applet to verify that the Command View TL service is running on the management station. Select **Start > Settings > Control Panel > Administrative Tools > Services**.

Table 9 ESL E-Series issues

Symptom	Possible Cause	Solution
Command View TL server does not detect the Interface Manager card	After powering up the library, it can take up to ten minutes for Command View TL to detect the Interface Manager card	This is a normal delay. Wait for ten minutes and try again.
	Bad network connection	Verify that the library and the management station are correctly cabled.
	Interface Manager card not powered up or in ready state	Power up the library. Observe status and link LEDs. For a description of LED diagnostic codes, see the *Troubleshooting* chapter of the *HP StorageWorks Interface Manager and Command View TL installation guide.*
	Incorrect IP address	Verify that the correct IP address of the library is entered in Command View TL. • See the *HP StorageWorks ESL E-Series Tape Library user guide* for instructions on determining the library IP address. • See Adding or removing a library to configure Command View TL with the correct IP address.
	Defective Cabinet Controller	Call HP Service.
	Interface Manager card has outdated firmware	Verify that the Interface Manager card has I130 or later firmware.

Table 9 ESL E-Series issues

Symptom	Possible Cause	Solution
Interface Manager card does not detect one or more FC interface controllers	Bad network connection	Verify that the Interface Manager card is properly connected to the library's internal LAN and that the cables are good. See the *HP StorageWorks ESL E-Series Tape Library User Guide* for more information.
	Incorrect firmware revision	Ensure that the FC interface controllers have the latest firmware revision. Check http://www.hp.com/support for the latest firmware for your devices.
	Defective Interface Manager card or FC interface controller	Observe status and link LEDs. Replace defective card or controller. For a description of LED diagnostic codes, see the "Troubleshooting" chapter of the *HP StorageWorks Interface Manager and Command View TL Installation Guide*.
	DHCP not enabled on the interface controller	DHCP must be enabled on the interface controller before the Interface Manager card can communicate with it. See the interface controller documentation for instructions on enabling DHCP mode. **NOTE:** HP recommends resetting all interface controllers to their default settings.
Interface Manager card does not detect drives or library	SCSI cables not connected properly	Check SCSI cabling.
	FC cables (e2400-FC 2G only) not connected properly or damaged	Check FC cables and replace if necessary. Use link LEDs to troubleshoot connections and cable integrity.
	SCSI settings or termination not set properly	• Check the SCSI settings for the device. • Check that the SCSI bus is properly terminated.
	Timing issues	Reset the corresponding FC interface controller.
	Drive not powered up or in ready state	Troubleshoot drive.

Table 9 ESL E-Series issues

Symptom	Possible Cause	Solution
Command View TL does not run in the browser	Incompatible browser version or Java support not enabled	• Ensure that you are using a minimum of Microsoft Internet Explorer 6.0 SP1 or later, or Netscape Navigator 6.2 or later. • Ensure that Java support is enabled in the browser.
	Java Runtime Environment (JRE) not installed	Download and install the Java 2 Platform, Standard Edition plugin v1.4.2 or later from the following website: http://www.java.com.
	Bad network connection or network down	• Check all physical network connections. If the connections are good, contact your network administrator. • Ping the management station. If pinging fails and the IP address is correct, contact your network administrator.
	Wrong IP address	Check the IP address of the management station. On the management station, open a command shell and enter `ipconfig`. You must use this IP address (or the network name of the management station) in the URL to access Command View TL.
	Management station not running, or Command View TL service not running on management station	• Check to see if the management station is operational. • Use the Services applet to verify that the Command View TL service is running on the management station. Select **Start > Settings > Control Panel > Administrative Tools > Services**.

A CLI Command Reference

This chapter provides an alphabetical reference of CLI commands used with the Interface Manager card.

User commands

The following commands are available to all users. Click a command name in the table to jump to the description of that command.

add directbackup	set system contact email	show interface targetport mode
create host	set system contact name	show interface targetport speed
delete directbackup	set system contact pager	show library access
download interface	set system contact phone	show library info
download drive	set system location	show library interface
download mgmt	set system name	show library name
download library	setup	show library productid
map host	show directbackup	show library revision
move media	show drive access	show library serialnumber
reboot all	show drive info	show library status
reboot interface	show drive interface	show library topology
reboot library	show drive name	show license
reboot mgmt	show drive productid	show media
restore interface defaults	show drive revision	show mgmt clock
restore system config	show drive serialnumber	show mgmt info
save interface log	show drive status	show mgmt revision
save drive lttsupportticket	show drive type	show mgmt status
save interface lttsupportticket	show firmware available	show mgmt timezone
save library lttsupportticket	show firmware revisions	show mode
save mgmt lttsupportticket	show host access	show network dhcp
save mgmt log	show host info	show network ipaddress
save system config	show host name	show partition
set host name	show interface access	show robotics status
set interface hostport alpa	show interface hostport alpa	show system assetnumber
set interface hostport	show interface hostport	show system contact email
connection	connection	show system contact name
set interface hostport mode	show interface hostport mode	show system contact pager
set interface hostport speed	show interface hostport speed	show system contact phone
set mgmt clock	show interface info	show system info
set mgmt password	show interface name	show system location
set mgmt timezone	show interface revision	show system name
set mode	show interface status	show system status
set network dhcp	show interface targetport alpa	unmap host
set network ipaddress	show interface targetport	
set system assetnumber	connection	

add directbackup

Description   Activates the Direct Backup licensed feature on one or more tape drives. To use this command, the license key for the Direct Backup licensed feature must have been entered, and there must be unused units of this feature.To move a unit of the Direct Backup advanced feature from one tape drive to another, that unit must first be freed using the `delete directbackup` command. If more tape drives are specified than there are Direct Backup licensed features available, the command fails, and no changes are made.

CAUTION: Using this command could force a reboot of some interfaces. Ensure that no backup jobs are in progress before running this command.

Syntax   `add directbackup <drive_num>`

Availability   All users and modes

Operands   `<drive_num>`   Specify the tape drive on which the Direct Backup feature will be activated.

                                                 The Direct Backup licensed feature may be activated on all tape drives by specifying *all* for this operand.

                                                 This operand is required.

Examples   To activate the Direct Backup feature on all tape drives:

```
/>add directbackup all
Caution: Adding Direct Backup could force a reboot of some interfaces
and will terminate all backup operations involving the rebooting
interfaces.

Do you really want to add a Direct Backup?

Committing configurationdone
Currently, 8 of 8 units of the Direct Backup feature are being used
```

To activate the Direct Backup feature on tape drive 1:

```
/>add directbackup 1

Caution: Adding Direct Backup could force a reboot of some interfaces
and will terminate all backup operations involving the rebooting
interfaces.

Do you really want to add a Direct Backup?

Committing configurationdone
Currently, 1 of 8 units of the Direct Backup feature are being used
```

See Also   show directbackup

                delete directbackup

create host

Description	Creates a reference to a HBA. This should only be used for hosts not currently connected to any interfaces.
	If the specified host has already been created using the specified node world wide name and port world wide name, no changes are made. If there already exists a host with the specified host name, no changes are made.
Syntax	`create host <nodewwn> <nodewwpn> <hostname>`
Availability	All users and modes
Operands	`<nodewwn>` Specify the node world wide name. World wide names are specified as 16 hex digits. For example, "1234567890ABCDEF" is a well-formed world wide name.
	This operand is required.
	`<nodewwpn>` Specify the node world wide port name. World wide port names are specified as 16 hex digits. For example, *1234567890ABCDEF* is a well-formed world wide name.
	This operand is required.
	`<hostname>` Specify the name of the host. The host name may contain letters, numbers, and '_' characters. The maximum length for a host name is 19 characters.
	This operand is required.
Examples	To create the host with node world wide name *10000E002020C69*, world wide port name *FFFFFFFFFFFFFFFF*, and named *myhost1*:

```
/>create host 100000E002020C69 FFFFFFFFFFFFFFFF myhost1
Committing configurationdone
```

See Also	unmap host
	set host name
	show host name

delete directbackup

Description   Deletes the Direct Backup licensed feature from one or more tape drives. To use this command, the license key for the Direct Backup licensed feature must have been entered.

If the specified tape drives do not have Direct Backup activated, no changes are made for those drives, but changes are made for other specified drives.

CAUTION: Using this command could force a reboot of some interfaces. Ensure that no backup jobs are in progress before running this command.

Syntax   `delete directbackup <drive_num>`

Availability   All users and modes

Operands   `<drive_num>`   Specify the tape drive on which the Direct Backup feature will be deleted.

The Direct Backup licensed feature may be deleted on all tape drives by specifying "all" for this operand.

This operand is required.

Examples   To delete the Direct Backup feature from all tape drives:

```
/>delete directbackup all

Caution: Deleting Direct Backup could force a reboot of some interfaces
and will terminate all backup operations involving the rebooting
interfaces.

Do you really want to delete a Direct Backup? y

Committing configurationdone
Currently, 0 of 8 units of the Direct Backup feature are being used
```

To delete the Direct Backup feature from tape drive 2:

```
/>delete directbackup 2

Caution: Deleting Direct Backup could force a reboot of some interfaces
and will terminate all backup operations involving the rebooting
interfaces.

Do you really want to delete a Direct Backup? y

Committing configurationdone
Currently, 1 of 8 units of the Direct Backup feature are being used
```

See Also   show directbackup

add directbackup

download interface

Description   Downloads the images of a firmware file to one or more FC interface controllers.

Firmware files can be retrieved from the Internet using HP StorageWorks Library and Tape Tools. Before using this command, a firmware file must have been transferred to the Interface Manager card firmware repository via FTP. See Updating firmware for more information.

CAUTION: Downloading firmware forces a reboot of the interface. Ensure that no backup jobs are in progress before running this command.

Syntax   `download interface <interface_num> [force]`

Availability   All users and modes

Operands   `<interface_num>`   Specify the interface number.

All of the interfaces may be rebooted by specifying *all* for this operand.

This operand is required.

`force`   Specify `force` to skip the prompt asking if you are sure you want to download the firmware.

This operand is optional.

Examples   To download the firmware repository file to interface 1:

```
/>download interface 1

Downloading interface firmware will cause a reboot of the
interface, and will cause any currently running backups to
fail.  Do you wish to continue (press y/n)? y

Downloading fimrware to Interface Card 1
Checking download status until status is download complete.
State: IN-PROGRESS                Download Percentage: 10
State: IN-PROGRESS                Download Percentage: 20
State: IN-PROGRESS                Download Percentage: 25
State: IN-PROGRESS                Download Percentage: 30
State: IN-PROGRESS                Download Percentage: 40
State: IN-PROGRESS                Download Percentage: 50
State: REBOOTING                  Download Percentage: 60
State: REBOOTING                  Download Percentage: 70
State: REBOOTING                  Download Percentage: 80
State: REBOOTING                  Download Percentage: 90
Success!
```

See Also   download drive

download mgmt

download drive

Description	Downloads the images of a firmware file to one or more interfaces.
	Firmware files can be retrieved from the Internet using HP StorageWorks Library and Tape Tools. Before using this command, a firmware file must have been transferred to the Interface Manager card's firmware repository via FTP. See Updating firmware for more information.
Syntax	`download drive <drive_num> [force]`
Availability	All users and modes
Operands	`<drive_num>` Specify the drive number. All of the drives may be downloaded by specifying "all" for this operand.
	This operand is required.
	`force` Specify `force` to skip the prompt asking if you are sure you want to download the firmware.
	This operand is optional.

Examples   To download the firmware repository file to all drives:

```
/>download drive all

Downloading drive firmware will cause a reboot of the
drive, and will cause any currently running backups to
fail.  Do you wish to continue (press y/n)? y

Downloading firmware to drive 1
Checking download status until status is download complete
State: IN-PROGRESS              Download Percentage: 10
State: IN-PROGRESS              Download Percentage: 20
State: IN-PROGRESS              Download Percentage: 25
State: IN-PROGRESS              Download Percentage: 30
State: IN-PROGRESS              Download Percentage: 40
State: IN-PROGRESS              Download Percentage: 50
State: REBOOTING               Download Percentage: 60
State: REBOOTING               Download Percentage: 70
State: REBOOTING               Download Percentage: 80
State: REBOOTING               Download Percentage: 90
Success!
```

See Also   download interface

download mgmt

download mgmt

Description   Downloads the image of a firmware file to the Interface Manager card.

Firmware files can be retrieved from the Internet using HP StorageWorks Library and Tape Tools. Before using this command, a firmware file must have been transferred to the Interface Manager card firmware repository via FTP. See Updating firmware for more information.

CAUTION: Downloading firmware forces a reboot of the Interface Manager card. Ensure that no backup jobs are in progress before running this command.

Syntax   `download mgmt [force]`

Availability   All users and modes

Operands   `force`   Specify `force` to skip the prompt asking if you are sure you want to download the firmware.

This operand is optional.

Examples   To download firmware to the Interface Manager card:

```
/>download mgmt

Downloading Interface Manager firmware will cause a reboot of the
Interface Manager, will end the current CLI session, and you will
have to log on again.
Do you wish to continue (press y/n)? y

Downloading firmware to the Interface Manager.done
Bye!
```

See Also   download drive

download interface

download library

Description   Downloads the image of a firmware file to the library.

Firmware files can be retrieved from the Internet using HP StorageWorks Library and Tape Tools. Before using this command, a firmware file must have been transferred to the Interface Manager card firmware repository via FTP. See Updating firmware for more information.

CAUTION: Downloading firmware forces a reboot of the library and all its devices. Ensure that no backup jobs are in progress before running this command.

Syntax   `download library [force]`

Availability   All users and modes

Operands   `force`   Specify `force` to skip the prompt asking if you are
                                            sure you want to download the firmware.

                                            This operand is optional.

Examples   To download firmware to the library:

```
/>download library

Downloading library firmware will cause a reboot of the
drive, and will cause any currently running backups to
fail.  Do you wish to continue (press y/n)? y

Downloading firmware to the library
Checking download status until status is download complete
State: IN-PROGRESS              Download Percentage: 10
State: IN-PROGRESS              Download Percentage: 20
State: IN-PROGRESS              Download Percentage: 25
State: IN-PROGRESS              Download Percentage: 30
State: IN-PROGRESS              Download Percentage: 40
State: IN-PROGRESS              Download Percentage: 50
State: REBOOTING                Download Percentage: 60
State: REBOOTING                Download Percentage: 70
State: REBOOTING                Download Percentage: 80
State: REBOOTING                Download Percentage: 90
Success!
```

See Also   download drive

               download mgmt

map host

Description   Provides a host with access to all of the current drives.

CAUTION: Using this command could force a reboot of some interfaces. Ensure that no backup jobs are in progress before running this command.

Syntax   `map host <host_num>`

Availability   All users and modes

Operands   *<host_num>*   Specify the host number

                                         This operand is required.

Examples   To give host 1 access to all drives:

```
/>map host 1
Caution: Mapping hosts coultd force a reboot of some interfaces
and will terminate all backup operations involving the rebooting
interfaces.
Do you really want to map the host? y

Committing configurationdone
```

See Also   unmap host

               set host name

               show host name

move media

Description	Moves media between drives, slots, and mail slots.
Syntax	`move media <destination> <source>`
Availability	All users and modes
Operands	`<destination>`, `<source>` The media locations are specified using a media location type code and the logical address of the location. For instance:

- Dn—Drive at logical address *n*
- Mn—Mailslot at logical address *n*
- Sn—Storage slot at logical address *n*

Examples   To move media from storage slot 10 to drive 1:

```
/>move media S10 D1
```

To move media from drive 1 to mail slot 1:

```
/>move media D1 M1
```

To move media from mail slot 1 to storage slot 10:

```
/>move media M1 S10
```

See Also   show media

reboot all

Description   Reboots the Interface Manager card and all interfaces.

CAUTION: To avoid loss of data, ensure that all backup jobs have completed before executing this command.

Syntax   `reboot all [force]`

Availability   All users and manual mode only

Operands   `force`   Specify to skip the prompt asking if you are sure you want to reboot the Interface Manager card and all interfaces.

This operand is optional.

Examples   To reboot the Interface Manager card and all interfaces:

```
/>reboot all
Caution: Rebooting the Interface Manager and all interfaces could
take up to XX seconds, will terminate all backup operations, and
will require you to log on again to use the CLI.
Do you really want to reboot everything (y/n)? y
Rebooting interfaces..done
Rebooting the Interface Manager
```

To reboot the Interface Manager card and all interfaces, skipping the reboot prompt:

```
/>reboot all force
Rebooting interfaces..done
Rebooting the Interface Manager
```

See Also   reboot interface

reboot library

reboot mgmt

reboot interface

Description   Reboots one or more interfaces. After entering this command, you are prompted to input whether you are sure you want to reboot the interfaces.

CAUTION: Ensure that an interface is not involved in any backup operations before rebooting it.

Syntax   `reboot interface <interface_num> [force]`

Availability   All users and manual mode only

Operands

`<interface_num>`	Specify the interface number. All of the interfaces may be rebooted by specifying *all* for this operand.
	This operand is required.
`force`	Specify `force` to skip the prompt asking if you are sure you want to reboot the interface(s).
	This operand is optional.

Examples   To reboot interface 1:

```
/>reboot interface 1
Caution: Rebooting interfaces could take up to XX seconds and will
terminate all backup operations involving the rebooting
interfaces.
Do you really want to reboot the interface(s) (y/n)? y
Rebooting interfaces..done
```

To reboot all interfaces, skipping the reboot prompt:

```
/>reboot interface all force
Rebooting interfaces..done
```

See Also   reboot all

reboot library

reboot mgmt

reboot library

Description   Reboots the llibrary. After executing this command, the CLI session is lost and must be reestablished.

CAUTION: To avoid loss of data, ensure that all backup jobs have completed before executing this command.

Syntax   `reboot library [force]`

Availability   All users and manual mode only

Operands   `force`   Specify `force` to skip the prompt asking if you are sure you want to reboot the Interface Manager card.

                                       This operand is optional.

Examples   To reboot the library:

```
/>reboot library
```

To reboot the library, skipping the reboot prompt:

```
/>reboot library force
Rebooting the Interface Manager
```

See Also   reboot all

            reboot interface

            reboot mgmt

reboot mgmt

Description   Reboots the Interface Manager card. After entering this command, you are prompted to input whether you are sure you want to reboot the Interface Manager card.

CAUTION: To avoid loss of data, ensure that all backup jobs have completed before executing this command.

Syntax   `reboot mgmt [force]`

Availability   All users and manual mode only

Operands   `force`   Specify `force` to skip the prompt asking if you are sure you want to reboot the Interface Manager card.

This operand is optional.

Examples   To reboot the Interface Manager card:

```
/>reboot mgmt
Caution: Rebooting the Interface Manager could take up to XX
seconds, and you will have to log on again to use the CLI.
Do you really want to reboot the Interface Manager (y/n)? y
Rebooting the Interface Manager
```

To reboot the Interface Manager card, skipping the reboot prompt:

```
/>reboot mgmt force
Rebooting the Interface Manager
```

See Also   reboot all

reboot interface

reboot library

restore interface defaults

Description   Restores interfaces to their factory defaults.

CAUTION: Using this command forces a reboot of the interface. Ensure that no backup jobs are in progress before running this command.

Syntax   `restore interface defaults <interface_num>`

Availability   All users and manual mode only

Operands   *<interface_num>*   Specify the interface number that will be restored to factory defaults. All of the interfaces may be restored to factory defaults by specifying *all* for this operand.

                                            This operand is required.

Examples   To restore the factory defaults on interface 1:

```
/>restore interface defaults 1
Committing configurationdone
The interface(s) must be rebooted before the new configuration
will take effect.
```

To restore the factory defaults on all interfaces:

```
/>restore interface defaults all
Committing configuration… done
The interfaces(s) must be rebooted before the new configuration
will take effect.
```

See Also   setup

restore system config

Description   Restores the system configuration so that it matches the last saved configuration. The system configuration includes the Interface Manager card, interfaces, and licensed feature configuration.

Before using this command, the system configuration must have been saved using the `save system config` command.

After entering this command, you are prompted to input whether you are sure you want to restore the system configuration.

> **CAUTION:** This command may cause a reboot of one or more interfaces, causing backup operations to terminate, so ensure that there are no backup operations in process when this command is executed.

Syntax   `restore system config [force]`

Availability   All users and automatic mode only

Operands   `force`   Specify `force` to skip the prompt asking if you are sure you want to restore the system configuration to the last saved configuration.

This operand is optional.

Examples   To restore the system configuration:

```
/>restore system config
Caution: Restoring the system configuration could take up to XX
seconds and may cause interfaces to reboot, terminating backup
operations involving the rebooting interfaces.
Do you really want to restore the system configuration (y/n)? y
Committing configurationdone
Rebooting interfaces..done
```

To restore the system configuration, skipping the prompt:

```
/>restore system config force
Committing configurationdone
Rebooting interfaces..done
```

See Also   save system config

save interface log

Description   Saves the boot status page, event log, stats log, and trace log to a single file in the Interface Manager card log repository. This file can be retrieved via FTP.

Syntax   `save interface log <interface_num>`

Availability   All users and modes

Operands   `<interface_num>`   Specify the number of the interface.

This operand is required.

Examples   To save the log for interface 1:

```
/>save interface log 1
Retrieving and saving log..done
You can access the file /im/xfer/HP_INTERFACE_LOG via FTP.
```

See Also   save mgmt log

save interface lttsupportticket

save drive lttsupportticket

Description   Generates an HP StorageWorks Library and Tape Tools (L&TT) support ticket for a drive. The Interface Manager card places the support ticket in an anonymous FTP directory, which can then be transferred from the Interface Manager card firmware repository via FTP.

Syntax   `save drive lttsupportticket <drive_num>`

Availability   All users and modes

Operands   `<drive_num>`   Specify a drive number. Information for the selected drive is displayed in the support ticket.

This operand is required.

Examples   To generate a support ticket for the 3rd drive in the ESL library:

```
/>save drive lttsupportticket 3
Generating support ticketdone
You can get your support ticket by using anonymous FTP.
```

See Also   save interface lttsupportticket

save library lttsupportticket

save mgmt lttsupportticket

save interface lttsupportticket

Description	Generates an L&TT support ticket for a FC interface controller. The Interface Manager card places the support ticket in an anonymous FTP directory, which can then be transferred from the Interface Manager card firmware repository via FTP.
Syntax	`save interface lttsupportticket <interface_num>`
Availability	All users and modes
Operands	`<interface_num>` Specify an interface number. Information for the selected FC interface controller is displayed in the support ticket. This operand is required.
Examples	To generate a support ticket for the interface 3:

```
/>save interface lttsupportticket 3
Generating support ticketdone
You can get your support ticket by using anonymous FTP.
```

See Also	save drive lttsupportticket
	save library lttsupportticket
	save mgmt lttsupportticket

save library lttsupportticket

Description	Generates an L&TT support ticket for a library. The Interface Manager card places the support ticket in an anonymous FTP directory, which can then be transferred from the Interface Manager card firmware repository via FTP.
Syntax	`save library lttsupportticket`
Availability	All users and modes
Operands	None
Examples	To generate a support ticket for the ESL library:

```
/>save library lttsupportticket
Generating support ticketdone
You can get your support ticket by using anonymous FTP.
```

See Also	save drive lttsupportticket
	save interface lttsupportticket
	save mgmt lttsupportticket

save mgmt lttsupportticket

Description	Generates an L&TT support ticket for the Interface Manager card. The Interface Manager card places the support ticket in an anonymous FTP directory, which can then be transferred from the Interface Manager card firmware repository via FTP.
Syntax	`save mgmt lttsupportticket`
Availability	All users and modes
Operands	None
Examples	To generate a support ticket for the Interface Manager card:

```
/>save mgmt lttsupportticket
Generating support ticketdone
You can get your support ticket by using anonymous FTP.
```

See Also	save drive lttsupportticket
	save interface lttsupportticket
	save library lttsupportticket

save mgmt log

Description	Saves a management log to a file in the Interface Manager card log repository. This file can be retrieved via FTP.
Syntax	`save mgmt log <filename>`
Availability	All users and modes
Operands	`<filename>` Specify the name of the log file. This name represents the name of the file that will be placed in the Interface Manager card log repository. Valid names include event, trace, history, or all.
	This operand is required.
Examples	To save the event log for the Interface Manager card:

```
/>save mgmt log event
Retrieving and saving log..done
You can access the file /im/xfer/EventLog.xml via FTP.
```

See Also	save interface log
	save mgmt lttsupportticket

save system config

Description   Saves the system configuration so that it can be restored at a later time using the `restore system config` command. The system configuration includes the Interface Manager card, interfaces, and licensed features configuration. This command overwrites any previously saved system configuration. After entering this command, you are prompted to input whether you are sure you want save the system configuration.

Syntax   `save system config [force]`

Availability   All users and modes

Operands   `force`   Specify `force` to skip the prompt asking if you are sure you want to save the current system configuration.

This operand is optional.

Examples   To save the system configuration:

```
/>save system config
Caution: Saving the system configuration will overwrite the last
saved system configuration.
Do you really want to save the system configuration (y/n)? y
Saving the system configurationdone
```

To save the system configuration, skipping the prompt:

```
/>save system config force
Saving the system configurationdone
```

See Also   restore system config

set host name

Description   Gives a host HBA a name. A name is applied to a host using the number of that host as it appears when using the `show host name all` command. If another host already has the specified name, no changes are made because every host name must be unique. If the specified host already has a name, the new name is applied, and all resource mapping pools to which the host had been added are updated to reflect the new name.

Syntax   `set host name <index> <hostname>`

Availability   All users and modes

Operands

`<index>`	Specify the number of the host to be named.
`<hostname>`	Specify the name of the host. The host name may contain letters, numbers, and '_' characters. The maximum length for a host name is 19 characters.
	This operand is required.

Examples   To set the name of host 1 to *myhost1*:

```
/>set host name 1 my_host1
Committing configurationdone
```

See Also   show host name

set interface hostport alpa

Description   Sets the ALPA for an interface port when the addressing mode of that port is set to hard addressing. If the interface port mode is not set to hard addressing, the ALPA is saved and used when the addressing mode is changed to hard addressing.

Syntax   `set interface hostport alpa <interface_num> <port_num> <address>`

Availability   All users and manual mode only

Operands   *<interface_num>*   Specify the number of the interface. The ALPA may be changed for all interfaces by specifying *all* for this operand.

This operand is required.

<port_num>   Specify the number of the port. The ALPA may be changed for all ports by specifying *all* for this operand.

This operand is required.

<address>   Specify the ALPA for the interface port. The ALPA may be either in hex notation or base 10. The hex notation must include the leading `0x`, and letter digits may be in upper or lower case. For example, to set the ALPA to 31, this operand could be either 0x1F or 0x1f in hex notation or 31 in base 10.

This operand is required.

Examples   To set the ALPA on port 1 of interface 1 to 15:

```
/>set interface hostport alpa 1 1 15
Committing configurationdone
```

See Also   show interface hostport alpa

ALPA matrix

set interface hostport connection

Description   Sets the connection type for one or more interfaces. The connections are either fabric or direct connect.

CAUTION: Using this command forces a reboot of all interfaces. Ensure that no backup jobs are in progress before running this command.

Syntax
```
set interface hostport connection fabric|direct
```

Availability   All users and automatic mode only

Operands   `fabric|direct`   Specify the connection type as *fabric* or *direct*.

This operand is required.

Examples   To set the connection type of all interfaces to *fabric*:

```
/>set interface hostport connection fabric
Committing configurationdone
The interface(s) must be rebooted for this command to take effect.
```

See Also   show interface hostport connection

set interface hostport mode

Description	Sets the port mode for one or more interfaces. If the interface port mode is set to hard addressing, the interface is given a default ALPA of 0xef (31 decimal). Use the `set interface hostport alpa` command to change the ALPA for that interface.
Syntax	`set interface hostport mode <interface_num> <port_num> hard|soft|nport`
Availability	All users and manual mode
Operands	`<interface_num>` Specify the number of the interface. The mode may be changed for all interfaces by specifying "all" for this operand. This operand is required. `<port_num>` Specify the number of the port. The mode may be changed for all ports by specifying "all" for this operand. This operand is required. `hard|soft|nport` Specify the port mode for the interface(s). This operand may be either *hard* for hard addressing, *soft* for soft addressing, or *nport* for fabric addressing. This operand is required.
Examples	To set the port mode of ports on all interfaces to soft addressing:

```
/>set interface hostport mode all all soft
Committing configurationdone
The interface(s) must be rebooted for this command to take effect.
```

See Also	show interface hostport mode
	show interface hostport alpa
	set interface hostport alpa

set interface hostport speed

Description   Sets the port speed for one or more interfaces. The available port speeds are 1
               Gbps or 2 Gbps. In Automatic mode, changing the interface hostport speed
               applies to all ports on all interfaces.

               CAUTION: Using this command in Automatic mode forces a reboot of all
               interfaces. Ensure that no backup jobs are in progress before running this
               command.

Syntax   `set interface hostport speed [<interface_num>]`
               `[<port_num>] 1|2`

Availability   All users and modes

Operands   *<interface_num>*   Specify the number of the interface. The speed may
                                         be changed for all interfaces by specifying *all* for this
                                         operand.

                                         This operand is required only in manual mode.

               <port_num>   Specify the number of the port. The speed may be
                                         changed for all ports by specifying *all* for this
                                         operand.

                                         This operand is required only in manual mode.

               1|2   Specify 1 or 2 Gbps port speed.

                                         This operand is required.

Examples   To set the port speed of all ports on all interfaces to 2 Gbps (this example
               assumes that you are using manual mode):

```
/>set interface hostport speed all all 2
Committing configurationdone
The interface(s) must be rebooted for this command to take effect.
```

See Also   show interface hostport speed

set mgmt clock

Description	Sets the date and time on the Interface Manager card.
Syntax	`set mgmt clock <time>`
Availability	All users and modes
Operands	`<time>` Specify the date and time as a string in the format:

<div style="margin-left:40%">

`mmddhhmmyy`

where:

`mm` is the month, valid values are 01-12

`dd` is the date, valid values are 01-31

`hh` is the hour, valid values are 00-23

`mm` is minutes, valid values are 00-59

`yy` is the year, valid values are 00-37

This operand is required.

</div>

Examples	To change the current date and time on the Interface Manager card to February 27, 2001 12:30:00:

```
/>set mgmt clock 0227123001
Committing configurationdone.
```

See Also	show mgmt clock

set mgmt password

Description	Sets the password for the current user. This command checks for a strong password and warns if the password is not a strong password (although it does not require a strong password). After using this command, the new password must be used to log in to the CLI.
Syntax	`set mgmt password`
Availability	All users and modes
Operands	None
Examples	To change the password to *clipwd*:

```
/> set mgmt password

Changing password for user cliadmin
New UNIX password: clipwd
BAD PASSWORD: it is based on a dictionary word
Retype new UNIX password: clipwd
```

set mgmt timezone

Description	Sets the Interface Manager card time zone.
Syntax	`set mgmt timezone <zone>`
Availability	All users and modes
Operands	`<zone>` Specify the time zone number that corresponds with the list that is displayed.
	This operand is required.
Examples	To change the Interface Manager card time zone to that for Denver, Colorado:

```
/>set mgmt timezone
Number  Timezone                            Number  Timezone
------  ---------------------------         ------
---------------------------
63      America/Belize                      94      America/Goose_Bay
64      America/Boa_Vista                   95      America/Grand_Turk
65      America/Bogota                      96      America/Grenada
66      America/Boise                       97      America/Guadeloupe
67      America/Buenos_Aires                98      America/Guatemala
68      America/Cambridge_Bay               99      America/Guayaquil
69      America/Cancun                      100     America/Guyana
70      America/Caracas                     101     America/Halifax
71      America/Catamarca                   102     America/Havana
72      America/Cayenne                     103     America/Hermosillo
73      America/Cayman                      104
America/Indiana/Indianapolis
74      America/Chicago                     105     America/Indiana/Knox
75      America/Chihuahua                   106     America/Indiana/Marengo
76      America/Cordoba                     107     America/Indiana/Vevay
77      America/Costa_Rica                  108     America/Indianapolis
78      America/Cuiaba                      109     America/Inuvik
79      America/Curacao                     110     America/Iqaluit
80      America/Danmarkshavn                111     America/Jamaica
81      America/Dawson                      112     America/Jujuy
82      America/Dawson_Creek                113     America/Juneau
83      America/Denver                      114     America/Kentucky/Louisville
84      America/Detroit                     115     America/Kentucky/Monticello
85      America/Dominica                    116     America/Knox_IN
86      America/Edmonton                    117     America/La_Paz
87      America/Eirunepe                    118     America/Lima
88      America/El_Salvador                 119     America/Los_Angeles
89      America/Ensenada                    120     America/Louisville
90      America/Fort_Wayne                  121     America/Maceio
91      America/Fortaleza                   122     America/Managua
92      America/Glace_Bay                   123     America/Manaus
93      America/Godthab                     124     America/Martinique
Enter the timezone number to select a timezone, 'm' to print more
possible
timezones or 'q' to quit without selecting a timezone [default = 'm']: 83
Committing configurationdone
```

See Also	show mgmt timezone

set mode

Description	Sets the Interface Manager mode for the current user to Automatic or Manual. Switching from Manual to Automatic mode may cause configuration changes made while in Manual mode to be lost, and requires the user to go through the basic setup steps provided by the `setup` command.
Syntax	`set mode auto|manual [force]`
Availability	All users and modes

Operands	`auto|manual`	Specify *auto* or *manual* mode as required.
		This operand is required.
	`[force]`	Use this operand to skip basic setup when switching to Automatic mode.
		This operand is optional.

Examples	To set the mode to *auto*:

```
/>set mode auto
Changing modedone
Now entering basic setup!
```

See Also	show mode
	setup

set network dhcp

Description	Enables or disable DHCP mode to set the Interface Manager card IP address. If DHCP is disabled, the Interface Manager card IP address, gateway address, and subnet mask must be set using `set network ipaddress` before the Interface Manager CLI can be accessed via Telnet.
Syntax	`set network dhcp`
Availability	All users and modes
Operands	None
Examples	To enable using DHCP to set the IP address of the Interface Manager card:

```
/>set network dhcp
Committing configurationdone
```

See Also	show network dhcp
	set network ipaddress
	show network ipaddress

set network ipaddress

Description	Sets the IP address, subnet mask, and gateway address for the Interface Manager card. This command automatically disables DHCP mode.
Syntax	`set network ipaddress <ip> <subnet> <gateway>`
Availability	All users and modes
Operands	*<ip>* Specify the IP address that the Interface Manager card should use.
	This operand is required.
	<subnet> Specify the subnet mask that the Interface Manager card should use.
	This operand is required.
	<gateway> Specify the gateway address that the Interface Manager card should use.
	This operand is required.
Examples	To immediately change the IP address to *207.46.249.190*, change the subnet mask to *255.255.248.0*, and change the current gateway address to *207.46.249.0*:

```
/>set network ipaddress 207.46.249.190 255.255.248.0 207.46.249.0
Committing configurationdone
Closing telnet session.
```

See Also	show network dhcp
	set network dhcp
	show network ipaddress

set system assetnumber

Description	Sets the system asset number.
Syntax	`set system assetnumber <ID>`
Availability	All users and modes
Operands	*<ID>* Specify the system asset number. The system asset number must only be composed of letters and numbers. Its maximum length is 63 characters.
	This operand is required.
Examples	To set the system asset number to *123456ABCD*:

```
/>set system assetnumber 123456ABCD
Committing configurationdone
```

See Also	show system assetnumber

set system contact email

Description	Sets the system contact e-mail address.
Syntax	`set system contact email <address>`
Availability	All users and modes
Operands	`<address>` Specify the system contact e-mail address. The e-mail address must conform to the e-mail address format specified in RFC 821.
	This operand is required.
Examples	To set the system contact e-mail address to *myname@myorg.com*:

```
/>set system contact email myname@myorg.com
Committing configurationdone
```

See Also	show system contact email
	show system contact name

set system contact name

Description	Sets the system contact name.
Syntax	`set system contact name <new_name>`
Availability	All users and modes
Operands	`<new_name>` Specify the system contact name. The system contact name must only be composed of letters, numbers, and the '_' character. Its maximum length is 19 characters.
	This operand is required.
Examples	To set the system contact name to *myfirstname_mylastname*:

```
/>set system contact name myfirstname_mylastname
Committing configurationdone
```

See Also	show system contact name
	show system contact email

set system contact pager

Description	Sets the system contact pager number.
Syntax	`set system contact pager <number>`
Availability	All users and modes
Operands	`<number>` Specify the system contact pager number. The system contact pager number can include alphanumeric characters, dashes, periods, or the '_' character. This operand is required.
Examples	To set the system contact pager number to *444-444-4444*:

```
/>set system contact pager 444-444-4444
Committing configurationdone
```

See Also	show system contact phone
	show system contact email

set system contact phone

Description	Sets the system contact phone number.
Syntax	`set system contact phone <number>`
Availability	All users and modes
Operands	`<number>` Specify the system contact phone number. The system contact phone number can include alphanumeric characters, dashes, periods, or the '_' character. This operand is required.
Examples	To set the system contact phone number to *444-444-4444*:

```
/>set system contact phone 444-444-4444
Committing configurationdone
```

See Also	show system contact phone
	show system contact pager

set system location

Description	Sets the system location.
Syntax	`set system location <location>`
Availability	All users and modes
Operands	`<location>` Specify the system location. The system location must only be composed of letters, and numbers. Its maximum length is 63 characters.
	This operand is required.
Examples	To set the system location to *my_system_location*:

```
/>set system location my_system_location
Committing configurationdone
```

See Also	show system location

set system name

Description	Sets the system name.
Syntax	`set system name <system_name>`
Availability	All users and modes
Operands	`<system_name>` Specify the name of the tape library. The tape library name can contain letters, numbers, and '_' characters. The maximum length for a tape library name is 19 characters
	This operand is required.
Examples	To set the system name to *my_system*:

```
/>set system name my_system
Committing configurationdone
```

See Also	show system name

setup

Description
Runs the Basic Setup Wizard. The Basic Setup Wizard takes you through a set of prompts that allow you to perform all of the configuration steps necessary to get your system running.

Syntax
`setup`

Availability
All users and automatic mode

Operands
None

Examples
Here is an example showing the use of the Basic Setup Wizard:

```
/>setup
Starting the basic configuration wizard.
Current/default values are indicated in square brackets, and can
be accepted by pressing the enter key.
Enter q to quit without saving, and s to save entered information
and quit.
System name [my_system]:
System asset number []: 123456ABCD
System location []: my_system_location
System contact name []: firstname_lastname
System contact phone number [222-222-2222]: 444-444-4444
System contact e-mail address []: myname@myorg.com
Current time ("mmddhhmmyy") [0927133302]: 1204083602
Current time zone ([-]hhmm) [0000]: -0700
Tape library name []: mylibrary

Current hosts:
Host #      Node WWN          Port WWN         Current Name      On-line?
------ ---------------- ---------------- ---------------- --------
1      11111111111111CC 11111111111111DD host1             yes
2      2222222222222CC  2222222222222DD  host2             yes
3      33333333333333CC 33333333333333DD host3             yes

Would you like to add an additional off-line host (y/[n])? y
Host node WWN: 44444444444444CC
Name for this host [host4]: myhost4
Host added.

Current hosts:
Host #      Node WWN          Port WWN         Current Name      On-line?
------ ---------------- ---------------- ---------------- --------
1      11111111111111CC 11111111111111DD host1             yes
2      2222222222222CC  2222222222222DD  host2             yes
3      33333333333333CC 33333333333333DD host3             yes
4      44444444444444CC 44444444444444DD myhost4           no

Would you like to add an additional off-line host (y/[n])? n

Would you like to change the host names (y/[n])? y
New name for host "host1" [host1]: myhost1
New name for host "host2" [host2]: myhost2
New name for host "host3" [host3]: myhost3
New name for host "myhost4" [myhost4]:

                                                   (continued)
```

```
Current host access to tape drives:
Host # Host Name        On-line? Access?
------ ---------------- -------- -------
1      myhost1          yes      no
2      myhost2          yes      yes
3      myhost3          yes      yes
4      myhost4          no       no

Would you like to change host access to the tape drives (y/[n])? y
Give on-line host "myhost1" access to tape drives (y/[n])? y
Give on-line host "myhost2" access to tape drives ([y]/n)? n
Give on-line host "myhost3" access to tape drives ([y]/n)? n
Give off-line host "myhost4" access to tape drives (y/[n])? y

Basic configuration is complete.
```

See Also   show system info

show directbackup

Description   Shows the total number of Direct Backup licenses purchased, the number of used
               Direct Backup licenses, and the number of available Direct Backup licenses for the
               tape library. This command also shows which drives currently have Direct Backup
               activated.

Syntax   show directbackup

Availability   All users and modes

Operands   None

Examples   To show Direct Backup licensed feature information:

```
/>show directbackup
Currently, 4 of 8 units of the Direct Backup feature are being used.

Drive Name       Direct Backup Activated?
---------------  ------------------------
mydrive1         yes
mydrive2         yes
mydrive3         yes
mydrive4         yes
mydrive5         no
mydrive6         no
mydrive7         no
mydrive8         no
```

See Also   add directbackup

show drive access

Description	Shows which hosts have access to one or more tape drives. For each tape drive, a list of hosts is displayed. For each host, the target LUN that gives the host access to the drive is shown.
Syntax	`show drive access <drive_num>`
Availability	All users and modes
Operands	`<drive_num>` Specify the tape drive for which to display access information. The access information may be displayed for all tape drives by specifying *all* for this operand. This operand is required.
Examples	To show tape drive access information for drive 1:

```
/>show drive access 1
Access information for drive 1:
Host     Host Name                        WW Node Name             LUN  Port
1          myhost1                        FFFFFFFFFFFFFFFFFFFF  1    1
```

See Also	show drive info
	show drive interface
	show drive name
	show drive productid
	show drive revision
	show drive serialnumber
	show drive status
	show drive type
	map host
	unmap host

show drive info

Description	Shows all information pertaining to one or more tape drives. This information includes the tape drive status.
Syntax	`show drive info <drive_num>`
Availability	All users and modes
Operands	`<drive_num>` Specify a tape drive that will have its information displayed. The information may be displayed for all tape drives by specifying *all* for this operand.
	This operand is required.
Examples	To show all information for all tape drives:

```
/>show drive info all
Tape Drive status:
Drive Number   Name                  Status
------------   -------------------   --------
Drive 1        drive 1               Green
Drive 2        drive 2               Green

********************************************************
Access information for drive 1:
Host      Host Name                          WW Node Name          LUN  Port
--------  ---------------------------------  --------------------  ---  ---
none      none                               none                  N/A  N/A

Access information for drive 2:
Host      Host Name                          WW Node Name          LUN  Port
--------  ---------------------------------  --------------------  ---  ---
none      none                               none                  N/A  N/A

********************************************************
Tape drive interface information:
Drive Number    Interface Card Name   Interface WW Node Name
-------------   -------------------   --------------------
Drive 1         100000e00202733b       100000e00202733b
Drive 2         100000e00202733b       100000e00202733b

********************************************************
Tape drive product ID:
Drive Number   Serial Number        Name                  Product ID
------------   -------------------  --------------------  
----------------
Drive 1        HU72M09609           drive 1               Ultrium 1-SCSI
Drive 2        HU72M09608           drive 2               Ultrium 1-SCSI

********************************************************
Tape Drive firmware revision:
Drive Number   Name                  Revision
------------   -------------------   --------
Drive 1        drive 1               E33W
Drive 2        drive 2               E33W
```

See Also   show drive access

                  show drive interface

                  show drive name

                  show drive productid

                  show drive revision

                  show drive serialnumber

                  show drive status

                  show drive type

show drive interface

Description   Shows interface information pertaining to one or more tape drives.

Syntax   `show drive interface <drive_num>`

Availability   All users and modes

Operands   `<drive_num>`   Specify the tape drive for which to display interface
                                      information. The interface information may be
                                      displayed for all tape drives by specifying "all" for this
                                      operand.

                                      This operand is required.

Examples   To show interface information for drive 1:

```
/>show drive interface 1
Tape drive interface information:
Drive Number     Interface Name    FC LUN Bus
---------------- ---------------- ------ ---
Drive 1          myintfc1          1      0
```

See Also   show drive access

                  show drive info

                  show drive name

                  show drive productid

                  show drive revision

                  show drive serialnumber

                  show drive status

                  show drive type

                  show interface info

show drive name

Description   Shows the name, serial number, and drive type of one or more tape drives based on tape drive bay numbers. If a tape drive is missing from a bay or the tape drive in that bay is offline, the tape drive serial number and type is empty.

Syntax   `show drive name <drive_num>`

Availability   All users and modes

Operands   `<drive_num>`   Specify a tape drive number whose tape drive name, serial number, and type will be displayed. The tape drive names, serial numbers, and types can be displayed for all tape drive by specifying *all* for this operand.

                                           This operand is required.

Examples   To show tape drive names, serial numbers, and types for all tape drives:

```
/>show drive name all
Tape drive name information:
Drive Number   Serial Number           Type           Name
------------   --------------------    -------------  --------------------
Drive 1        IE71L07088              Ultrium 1-SCSI  drive 1
Drive 2        IE71L06811              Ultrium 1-SCSI  drive 2
```

See Also   show drive access

                   show drive info

                   show drive interface

                   show drive productid

                   show drive revision

                   show drive serialnumber

                   show drive status

                   show drive type

show drive productid

Description	Shows the product ID of one or more tape drives.
Syntax	`show drive productid <drive_num>`
Availability	All users and modes
Operands	`<drive_num>` Specify a tape drive for which to display the product ID. The tape drive product ID may be displayed for all tape drives by specifying *all* for this operand.
	This operand is required.
Examples	To show the product ID for all tape drives:

```
/>show drive productid all
Tape drive product ID:
Drive Number      Product ID
---------------- ----------------
Drive 1           Ultrium 1-SCSI
```

See Also
     show drive access

     show drive info

     show drive interface

     show drive name

     show drive revision

     show drive serialnumber

     show drive status

     show drive type

show drive revision

Description   Shows the firmware revision of one or more tape drives.

Syntax   `show drive revision <drive_num>`

Availability   All users and modes

Operands   `<drive_num>`   Specify a tape drive for which to display the firmware revision. The tape drive firmware revision may be displayed for all tape drives by specifying *all* for this operand.

                                      This operand is required.

Examples   To show the firmware revision for all tape drives:

```
/>show drive revision all
Tape drive firmware revision:
Drive Number     Firmware Revision
---------------  -----------------
Drive 1          AEFF
Drive 2          AEFF
```

See Also   show drive access

               show drive info

               show drive interface

               show drive name

               show drive productid

               show drive serialnumber

               show drive status

               show drive type

show drive serialnumber

Description	Shows the serial number of one or more tape drives.
Syntax	`show drive serialnumber <drive_num>`
Availability	All users and modes
Operands	`<drive_num>` Specify a tape drive for which to display the serial number. The tape drive serial number may be displayed for all tape drives by specifying *all* for this operand. This operand is required.
Examples	To show the serial number for all tape drives:

```
/>show drive serialnumber all
Tape drive serial number:
Drive Number     Serial Number
---------------  ---------------
Drive 1          222222222222
Drive 2          333333333333
```

See Also	show drive access
	show drive info
	show drive interface
	show drive name
	show drive productid
	show drive revision
	show drive status
	show drive type

show drive status

Description	Shows the status of one or more tape drives.
Syntax	`show drive status <drive_num>`
Availability	All users and modes
Operands	*<drive_num>* Specify a tape drive for which to display the status. The tape drive status may be displayed for all tape drives by specifying *all* for this operand. This operand is required.
Examples	To show the status for all tape drives:

```
/>show drive status all
Tape Drive status:
                                     Is        Firmware  Has
Drive Number   serialNumber   Status  Available Mismatch  Errors
------------   -------------- -------- --------- --------- --------
Drive 1        HU72M09167     Green    No        No        No
Drive 2        HU72M09172     Yellow   Yes       Yes       Yes*

*Use the command 'show drive status' with a specific drive number to see
 specific errors for this device.
```

See Also	show drive access
	show drive info
	show drive interface
	show drive name
	show drive productid
	show drive revision
	show drive serialnumber
	show drive type

show drive type

Description	Shows the tape drive type for one or more tape drives.
Syntax	`show drive type <drive_num>`
Availability	All users and modes
Operands	`<drive_num>` Specify a tape drive for which to display the type. The type may be displayed for all tape drives by specifying *all* for this operand. This operand is required.
Examples	To show the tape drive type for all tape drives:

```
/>show drive type all
Tape drive type:
Drive Number     type
---------------- ----------------
Drive 1          Ultrium 1-SCSI
Drive 2          Ultrium 1-SCSI
```

See Also	show drive access
	show drive info
	show drive interface
	show drive name
	show drive productid
	show drive revision
	show drive serialnumber
	show drive status

show firmware available

Description	Shows the firmware files and revisions available to be downloaded to devices.
Syntax	`show firmware available`
Availability	All users and modes
Operands	None
Examples	To show the available firmware files and revisions:

```
/>show firmware available
Firmware Revision  VendorId     ProductID
-----------------  -----------  -----------
i100               HP           INTRFC-MGR01
1.05               HP           NS E2400-160
E36R               HP           Ultrium 1-SCSI
```

See Also	show firmware revisions

show firmware revisions

Description	Shows the current firmware revisions installed in the Interface Manager card and FC interface controllers.
Syntax	`show firmware revisions`
Availability	All users and modes
Operands	None
Examples	To show the current firmware revisions:

```
[service]/>show firmware revisions
Current Firmware Revisions
Overall firmware revision: 2.00.0

Interface manager firmware revision: 1.01

Tape library firmware revision: 3.456

Tape drive firmware revision:
Drive Number     Firmware Revision
---------------- -----------------
Drive 1          AEFF
Drive 2          AEFF
Drive 3          AEFF
Drive 4          AEFF
Drive 5          AEFF
Drive 6          AEFF
Drive 7          AEFF
Drive 8          AEFF

Interface firmware revision:
Interface Number Firmware Revision
---------------- -----------------
1                2.02
2                2.02
3                2.02
4                2.02
```

See Also	show firmware available

show host access

Description   Shows which tape drives all hosts have access to. For each tape drive, the LUN to which the host or hosts have access is displayed.

Syntax   `show host access`

Availability   All users and modes

Operands   None

Examples   To show host access information for the hosts:

```
/>show host access
Access information for host 1 (WWNN:  1111111111111111) :
  Device     Port  LUN  Partition
  ---------  ----  ---  ---------
  Library    0     0    Partition 1
  Drive 1    0     0    Partition 1, Drive 1
  Drive 2    0     1    Partition 1, Drive 2
  Drive 3    1     0    Partition 1, Drive 3
  Drive 4    1     1    Partition 1, Drive 4
```

See Also   show host info

               show interface access

show host info

Description   Shows the name, node WWN, port WWN, and mapped status of all hosts.

Syntax   `show host info`

Availability   All users and modes

Operands   None

Examples   To show information for all hosts:

```
/>show host info

Host name information:
Host #     Node WWN         Port WWN         Current Name     Mapped
------  ---------------  ---------------  ---------------  --------
1       11111111111111CC 11111111111111DD myhost1          yes
2       22222222222222CC 22222222222222DD myhost2          no
```

See Also   show host name

               show interface info

show host name

Description	Shows the name, node WWN, port WWN, and mapped status of all hosts.
Syntax	`show host name`
Availability	All users and modes
Operands	None
Examples	To show host names, world wide names, and mapped statuses for all hosts:

```
/>show host name
Host name information:
Host #     Node WWN         Port WWN        Current Name       Mapped
------  ---------------- ---------------- ---------------- --------
1       11111111111111CC 11111111111111DD myhost1            yes
2       22222222222222CC 22222222222222DD myhost2            no
```

See Also   set host name

show interface access

Description	Shows access information at the interface level. This command lists all tape drives connected to the specified interface. For each tape drive listed, the command shows which hosts have access to it, and the target LUN giving the host access to the drive.
Syntax	`show interface access <interface_num>`
Availability	All users and modes
Operands	`<interface_num>` Specify the interface for which to display access information. The access information may be displayed for all interfaces by specifying *all* for this operand.
	This operand is required.
Examples	To show interface access information for interface 1:

```
/>show interface access 1
Interface access information:
Interface 1 tape drives:
  Access information for drive 1:
  Host     Host Name                               WW Node Name           LUN  Port
  -------- ------------------------------- -------------------- ----
  1        myhost1                                 FFFFFFFFFFFFFFFFFF  1     1
```

See Also   show drive access

show interface hostport alpa

Description	Shows the ALPA of one or more interfaces. This command also indicates whether the interfaces currently have their port mode set to hard addressing or are using the ALPAs.
Syntax	`show interface hostport alpa <interface_num> <port_num>`
Availability	All users and modes
Operands	

	<interface_num>	Specify an interface number. The ALPA may be displayed for all interfaces by specifying *all* for this operand.
		This operand is required.
	<port_num>	Specify a port number. The ALPA may be displayed for all ports by specifying *all* for this operand.
		This operand is required.

Examples   To show the ALPAs for all interfaces:

```
/>show interface hostport alpa all all
Interface ALPAs (* indicates ALPA is not set):
Interface Card   WW Port Name      ALPA Port Mode
---------------- ----------------- ---- ---------
1
    hostport1        FFFFFFFFFFFFFFFF  0x71 hard
    hostport2        AAAAAAAAAAAAAAAA  0x96 hard
```

See Also   set interface hostport alpa

                     ALPA matrix

show interface hostport connection

Description   Shows the connection type for one or more interfaces.

Syntax   `show interface hostport alpa <interface_num> <port_num>`

Availability   All users and modes

Operands   `<interface_num>`   Specify an interface number. The connection type may be displayed for all interfaces by specifying *all* for this operand.

                                             This operand is required.

                `<port_num>`   Specify a port number. The connection type may be displayed for all ports by specifying *all* for this operand.

                                             This operand is required.

Examples   To show the connection type for all interfaces:

```
/>show interface hostport connection all all
Interface connection type:
Interface Card   WW Port Name      Connection Type
---------------- ---------------- ---------------
1
   hostport1       FFFFFFFFFFFFFFFF   fabric
   hostport2       AAAAAAAAAAAAAAAA   fabric
```

See Also   set interface hostport connection

show interface hostport mode

Description   Shows the port modes of one or more interfaces.

Syntax   `show interface hostport mode <interface_num> <port_num>`

Availability   All users and modes

Operands   *<interface_num>*   Specify an interface number. The mode may be displayed for all interfaces by specifying *all* for this operand.

This operand is required.

<port_num>   Specify a port number. The mode may be displayed for all ports by specifying *all* for this operand.

This operand is required.

Examples   To show the port modes for all interfaces:

```
/>show interface hostport mode all all
Interface port mode:
Interface Card   WW Port Num        Connection type
---------------- ----------------- -----
1
    hostport1        FFFFFFFFFFFFFFFF  N-Port
    hostport2        AAAAAAAAAAAAAAAA  N-Port
```

See Also   set interface hostport mode

show interface hostport speed

Description   Shows the port speeds of one or more interfaces.

Syntax   `show interface hostport speed <interface_num> <port_num>`

Availability   All users and manual mode

Operands   `<interface_num>`   Specify the number of the interface. The value may be
                                            changed for all interfaces by specifying *all* for this
                                            operand.

                                            This operand is required.

                   `<port_num>`   Specify the number of the port. The value may be
                                            changed for all ports by specifying *all* for this
                                            operand.

                                            This operand is required.

Examples   To show the port speeds for interface 1:

```
[service]/>show interface hostport speed 1 all
Interface port speed:
Interface Card    WW Port Num        Speed
---------------- ----------------- -----
1
    hostport1        FFFFFFFFFFFFFFFF  2 Gbpsec
    hostport2        AAAAAAAAAAAAAAAA  2 Gbpsec
```

See Also   set interface hostport speed

show interface info

Description	Shows all information pertaining to one or more interfaces.
Syntax	`show interface info <interface_num>`
Availability	All users and modes
Operands	`<interface_num>` Specify an interface number. The information may be displayed for all interfaces by specifying *all* for this operand.
	This operand is required.
Examples	To show all information for all interfaces:

```
/>show interface info all
Interface information:
Interface status:
Interface Name     Status
---------------- ----------------
myintfc1         Good
myintfc2         Downloading

****************************************************************
Interface access information:
Interface myintfc1 tape drives:
Tape Drive
----------------
mydrive1
mydrive2

Tape drive access information:
mydrive1
Host Name        Drive  LUN Pool
---------------- ---------- ----------------
myhost1          1          mypool1
myhost2          1          mypool1
myhost3          2          mypool3

mydrive2
Host Name        Drive  LUN Pool
---------------- ---------- ----------------
myhost1          2          mypool1
myhost2          2          mypool1
myhost3          4          mypool3

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Interface myintfc2 tape drives:
Tape Drive
----------------
mydrive3
mydrive4

Tape drive access information:
mydrive3
Host Name        Drive  LUN Pool
---------------- ---------- ----------------
myhost1          3          mypool1
myhost2          3          mypool1
myhost3          1          mypool3
```

```
mydrive4
Host Name        Drive  LUN Pool
---------------- ---------- ----------------
myhost1          4          mypool1
myhost2          4          mypool1
myhost3          3          mypool3

*************************************************************
Interface ALPAs (* indicates ALPA is not set):
Interface Name   ALPA Port Mode
---------------- ---- ---------
myintfc1         *    nport
myintfc2         0x23 hard

*************************************************************
Interface time and date:   (Only displayed for service user or manual mode)
Interface Name   Date       Time
---------------- ---------- -----
myintfc1         12/14/2002 13:02
myintfc2         12/14/2002 13:01

*************************************************************
Interface connection type:
Interface Name   Connection Type
---------------- ---------------
myintfc1         fabric
myintfc2         fabric

*************************************************************
Interface event mask:   (Only displayed for service user)
Interface Name   Event Mask
---------------- ---------------
myintfc1         0xFF
myintfc2         0x01

*************************************************************
Interface Fibre Channel discovery mode:   (Only displayed for service user
or manual mode)
Interface Name   Fibre Channel Discovery Mode
---------------- ----------------------------
myintfc1         reboot
myintfc2         reboot

*************************************************************
Interface name information:
Interface # Node WWN         Port WWN         Current Name
----------- ---------------- ---------------- ----------------
1           11111111111111CC 11111111111111DD myhost1
2           22222222222222CC 22222222222222DD myhost2

*************************************************************
Interface initiator ID(s):
Interface Name   Initiator ID(s)
---------------- ----------------------------
myintfc1         6, 7
myintfc2         7

*************************************************************
Interface port mode:
Interface Name   Port Mode
---------------- ----------------------------
myintfc1         nport
myintfc2         hard
```

```
****************************************************************
Interface port speed:    (Only displayed for service user or manual mode)
Interface Name   Port Speed
---------------- ----------------------------
myintfc1         1 Gbpsec
myintfc2         1 Gbpsec

****************************************************************
Interface firmware revision:
Interface Name   Firmware revision
---------------- -----------------
myintfc1         2.00
myintfc2         2.00

****************************************************************
Interface SCSI device discovery:    (Only displayed for service user)
Interface Name   SCSI Device Discovery
---------------- ---------------------
myintfc1         enabled
myintfc2         enabled

****************************************************************
Interface SCSI device discovery delay:    (Only displayed for service user)
Interface Name   SCSI Device Discovery Delay
---------------- ----------------------------
myintfc1         300 seconds
myintfc2         300 seconds

****************************************************************
Interface statistics gathering:    (Only displayed for service user)
Interface Name   Statistics Gathering
---------------- ---------------------
myintfc1         enabled
myintfc2         enabled

****************************************************************
Interface target reset mode:    (Only displayed for service user or manual mode)
Interface Name   Target Reset Mode
---------------- -----------------
myintfc1         standard
myintfc2         standard

****************************************************************
Interface trace level:    (Only displayed for service user)
Interface Name   Trace Levels
---------------- ------------
myintfc1         2, 4
myintfc2         2, 4

****************************************************************
Interface write buffering:    (Only displayed for service user or manual mode)
Interface Name   Write Buffering
---------------- ---------------------
myintfc1         enabled
myintfc2         enabled
```

See Also   show drive info

show interface name

Description	Shows the name and node WWN of one or more interfaces.
Syntax	`show interface name <interface_num>`
Availability	All users and modes
Operands	`<interface_num>` Specify the interface number for which to display interface names and world wide names. The information can be displayed for all interfaces by specifying *all* for this operand.

This operand is required. |
| Examples | To show interface names and world wide names all interfaces: |

```
/>show interface name all
Interface name information:
Interface Card   Node WWN          Current Name
--------------   ----------------  ------------
1                11111111111111CC  myhost1
2                22222222222222CC  myhost2
```

See Also	show drive name

show interface revision

Description	Shows the firmware revision of one or more interfaces.
Syntax	`show interface revision <interface_num>`
Availability	All users and modes
Operands	`<interface_num>` Specify an interface whose firmware revisions will be displayed. The firmware revisions may be displayed for all interfaces by specifying *all* for this operand.

This operand is required. |
| Examples | To show the firmware revisions for all interfaces: |

```
/>show interface revision all
Interface firmware revision:
Interface Card     WW Node Name          Firmware Revision
----------------   --------------------  -----------------
1                  100000e0020286d1      5.01
2                  100000e00202733b      5.01
```

See Also	show firmware revisions

show interface status

Description   Shows the status of one or more interfaces.

Syntax   `show interface status <interface_num>`

Availability   All users and modes

Operands   `<interface_num>`   Specify an interface for which to display the status.
                                           The interface status may be displayed for all interfaces
                                           by specifying *all* for this operand.

                                           This operand is required.

Examples   To show the status for all interfaces:

```
/>show interface status all
Interface status:
                        Firmware  Reboot    Has
Interface Card    WW Node Name     Status  State    Mismatch  Required
Errors
-----------------  ----------------  ------  -------  --------  --------
------
Interface Card 1   bb5ea468bb5ea354  Green   Online   No        No
No
Interface Card 2   bb4ff343236bc023  Yellow  Offline  Yes       Yes
Yes*

*Use the command 'show interface status' with a specific interface number
to see specific errors for this device.
```

See Also   show interface info

show interface targetport alpa

Description   Shows the ALPA of one or more interfaces. This also indicates whether the
               interfaces currently have their port mode set to hard addressing are are using the
               ALPAs.

Syntax   `show interface targetport alpa <interface_num> <port_num>`

Availability   All users and modes

Operands   *<interface_num>*   Specify an interface number. The ALPA may be
                                    displayed for all interfaces by specifying *all* for this
                                    operand.

                                    This operand is required.

               <port_num>   Specify a port number. The ALPA may be displayed
                                    for all ports by specifying *all* for this operand.

                                    This operand is required.

Examples   To show the ALPAs for all interfaces:

```
/>show interface targetport alpa all all
Interface ALPAs (* indicates ALPA is not set):
Interface Card   WW Port Name       ALPA Port Mode
---------------- ----------------- ---- ---------
1
   hostport1       FFFFFFFFFFFFFFFF  0x71 hard
   hostport2       AAAAAAAAAAAAAAAA  0x96 hard
```

See Also   set interface hostport alpa

               ALPA matrix

show interface targetport connection

Description   Shows the connection type for one or more interfaces.

Syntax   `show interface targetport alpa <interface_num> <port_num>`

Availability   All users and modes

Operands   *<interface_num>*   Specify an interface number. The connection type may
                                         be displayed for all interfaces by specifying *all* for this
                                         operand.

                                         This operand is required.

               <port_num>   Specify a port number. The connection type may be
                                         displayed for all ports by specifying *all* for this
                                         operand.

                                         This operand is required.

Examples   To show the connection type for all interfaces:

```
/>show interface targetport connection all all
Interface connection type:
Interface Card   WW Port Name        Connection Type
---------------- ----------------    ---------------
1
    hostport1       FFFFFFFFFFFFFFFF    fabric
    hostport2       AAAAAAAAAAAAAAAA    fabric
```

See Also   set interface hostport connection

show interface targetport mode

Description	Shows the port modes of one or more interfaces.
Syntax	`show interface targetport mode <interface_num> <port_num>`
Availability	All users and modes
Operands	*<interface_num>* Specify an interface number. The mode may be displayed for all interfaces by specifying *all* for this operand.
	This operand is required.
	<port_num> Specify a port number. The mode may be displayed for all ports by specifying *all* for this operand.
	This operand is required.
Examples	To show the port modes for all interfaces:

```
/>show interface targetport mode all all
Interface port mode:
Interface Card   WW Port Num       Connection type
---------------- ----------------- -----
1
   hostport1       FFFFFFFFFFFFFFFF  N-Port
   hostport2       AAAAAAAAAAAAAAAA  N-Port
```

See Also   set interface hostport mode

show interface targetport speed

Description   Shows the port speeds of one or more interfaces.

Syntax   `show interface targetport speed <interface_num> <port_num>`

Availability   All users and manual mode

Operands   `<interface_num>`   Specify the number of the interface. The value may be changed for all interfaces by specifying *all* for this operand.

This operand is required.

`<port_num>`   Specify the number of the port. The value may be changed for all ports by specifying *all* for this operand.

This operand is required.

Examples   To show the port speeds for interface 1:

```
[service]/>show interface targetport speed 1 all
Interface port speed:
Interface Card    WW Port Num       Speed
--------------- ----------------- -----
1
   hostport1       FFFFFFFFFFFFFFFF  2 Gbpsec
   hostport2       AAAAAAAAAAAAAAAA  2 Gbpsec
```

See Also   set interface hostport speed

show library access

Description   Shows which hosts have access to the tape library. For each host, the target LUN that gives the host access to the library is shown.

Syntax   `show library access`

Availability   All users and modes

Operands   None

Examples   To show tape library access information:

```
/>show library access
Access information for the tape library:
Host     Host Name                             WW Node Name            LUN  Port
-------- ------------------------------------- --------------------- --- ---
1        myhost1                               FFFFFFFFFFFFFFFFFF    1    1
```

See Also   map host

unmap host

show library info

Description   Shows all information pertaining to the tape library.

Syntax   `show library info`

Availability All users and modes

Operands   None

Examples   To show all information for the tape library:

```
/>show library info
All tape library information
Tape library name: picker
Tape library firmware status: Green
Tape library product ID: ESL9322
Tape library serial number: 2G33KZ85H002
Tape library firmware revision: 3.40

*************************************************************************
****
Tape library topology
Tape library:
Library Name          Serial Number         Interface Name
--------------------  --------------------  --------------------
picker                2G33KZ85H002          100000e0020286d1

Tape drives:
Drive Num             Serial Number         Type        Online? Interface
Name
------------------ ------------------ ------------ -------
Drive 1               HU72M09609            Ultrium 1-SCSI   yes
100000e0020286d1
Drive 2               HU72M09608            Ultrium 1-SCSI   yes
100000e0020286d1
Drive 3               HU73A01003            Ultrium 1-SCSI   yes
100000e00202733b
Drive 4               HU72L12069            Ultrium 1-SCSI   yes
100000e00202733b
Drive 5               HU72L12066            Ultrium 1-SCSI   yes
100000e0020286d1
Drive 6               HU72L12103            Ultrium 1-SCSI   yes
100000e0020286d1
Drive 7               HU73A05925            Ultrium 1-SCSI   yes
100000e00202733b
Drive 8               HU72M07819            Ultrium 1-SCSI   yes
100000e00202733b

Interfaces:
Interface Card        Interface Name        WW Node Name
--------------------  --------------------  ----------------
1                     100000e0020286d1      100000e0020286d1
2                     100000e00202733b      100000e00202733b
```

See Also   show drive info

              show host info

show library interface

Description	Shows interface information pertaining to the library.
Syntax	`show library interface`
Availability	All users and modes
Operands	None
Examples	To show interface information for the tape library:

```
/>show library interface
Tape library interface information:
Interface Card        WW Port Name
--------------------- --------------------
1                     100000e0020286d1
```

See Also	show interface info
	show library info

show library name

Description	Shows the name of the tape library.
Syntax	`show library name`
Availability	All users and modes
Operands	None
Examples	To show the name of the tape library:

```
/>show library name
Tape library name: mylibrary
```

See Also	show library info

show library productid

Description	Shows the product ID of the tape library.
Syntax	`show library productid`
Availability	All users and modes
Operands	None
Examples	To show the product ID of the tape library:

```
/>show library productid
Tape library product ID: ESL 9326
```

See Also	show library info

show library revision

Description   Shows the firmware revision of the tape library.

Syntax   `show library revision`

Availability All users and modes

Operands   None

Examples   To show the firmware revision of the tape library:

```
/>show library revision
Tape library firmware revision: 3.456
```

See Also   show library info

              show firmware revisions

show library serialnumber

Description   Shows the serial number of the tape library.

Syntax   `show library serialnumber`

Availability All users and modes

Operands   None

Examples   To show the serial number of the tape library:

```
/>show library serialnumber
Tape library serial number: 123456ABCDEF
```

See Also   show library info

show library status

Description   Shows the status of the tape library.

Syntax   `show library status`

Availability   All users and modes

Operands   None

Examples   To show the status of the tape library:

```
/>show library status

Component            Status  Description
-------------------  ------  ----------------------
Tape library         Red
  Robotics           Green   No errors detected

  Drives:
    Drive1           Green   No errors detected
    Drive2           Green   No errors detected
    Drive3           Green   No errors detected
    Drive4           Green   No errors detected
    Drive5           Green   No errors detected
    Drive6           Green   No errors detected

  Interfaces:
    Interface1       Red     Firmware Mismatch Detected
    Interface2       Red     Firmware Mismatch Detected

  Interface Manager  Red     Firmware Mismatch Detected
```

See Also   show library info

show library topology

Description   Shows the topology of the tape library.

Syntax   `show library topology`

Availability   All users and modes

Operands   None

Examples   To show the topology of the tape library:

```
/>show library topology
Tape library topology
Tape library:
Library Name         Serial Number        Interface Name
-------------------  -------------------  -------------------
picker               2G33KZ85H002         100000e0020286d1

Tape drives:
Drive Num            Serial Number        Type         Online? Interface
Name
------------------  ------------------  -------------  -------
Drive 1             HU72M09609          Ultrium 1-SCSI   yes
100000e0020286d1
Drive 2             HU72M09608          Ultrium 1-SCSI   yes
100000e0020286d1
Drive 3             HU73A01003          Ultrium 1-SCSI   yes
100000e00202733b
Drive 4             HU72L12069          Ultrium 1-SCSI   yes
100000e00202733b
Drive 5             HU72L12066          Ultrium 1-SCSI   yes
100000e0020286d1
Drive 6             HU72L12103          Ultrium 1-SCSI   yes
100000e0020286d1
Drive 7             HU73A05925          Ultrium 1-SCSI   yes
100000e00202733b
Drive 8             HU72M07819          Ultrium 1-SCSI   yes
100000e00202733b

Interfaces:
Interface Card       Interface Name       WW Node Name
-------------------  -------------------  ----------------
1                    100000e0020286d1     100000e0020286d1
2                    100000e00202733b     100000e00202733b
```

See Also   show library info

show license

Description	Shows the license key and quantity of currently licensed features.
Syntax	`show license`
Availability	All users and modes
Operands	None
Examples	To show the licensed features supported and currently licensed and their license keys:

```
/>show license
Supported Licensed Feature       Licensed?  Qty  License Key
------------------------------   ---------  ---  -------------
Direct Backup                    Yes        8    cQebzbRdScRfc0iK
Advanced Access Controls         No
```

See Also	show mgmt info

show media

Description	Shows media information for storage slots, drives, mail slots, or all.	
Syntax	`show media [all|slots|mail|drive]`	
Availability	All users and modes	
Operands	`all`	Shows media information for all storgage slots, drives, and mail slots
	`slots [<range>]`	Shows media information for all storage slots or those within a range.
	`mail [<range>]`	Shows media information for all mail slots or those within a range.
	`drive [<range>]`	Shows media information for all drives or those within a range.
Examples	To show media info for all storage slots:	

```
/>show media slots
```

To show media info for slots 1 - 100:

```
/>show media slots 1
100
```

To show media info for all storage slots, drives, and mail slots:

```
/>show media slots all
```

See Also	move media

show mgmt clock

Description	Shows the current date and time for the Interface Manager card.
Syntax	`show mgmt clock`
Availability	All users and modes
Operands	None
Examples	To show the current date and time for the Interface Manager card:

```
/>show mgmt clock
Interface managager date and time: 12/14/2002 13:02
```

See Also	set mgmt clock
	set mgmt timezone

show mgmt info

Description	Shows Interface Manager card information.
Syntax	`show mgmt info`
Availability	All users and modes
Operands	None
Examples	To show all Interface Manager card information:

```
/>show mgmt info
Interface manager status: Good
Interface manager firmware revision: 1.01
Interface manager date and time: 12/14/2002 13:02
Interface manager timezone: -07:00
```

See Also	show drive info
	show host info
	show interface info
	show library info

show mgmt revision

Description	Shows the Interface Manager card firmware revision.
Syntax	`show mgmt revision`
Availability	All users and modes
Operands	None
Examples	To show the current Interface Manager card firmware revision:

```
/>show mgmt revision
Interface manager firmware revision: 1.01
```

See Also	show mgmt info

show mgmt status

Description	Shows the Interface Manager card status.
Syntax	`show mgmt status`
Availability	All users and modes
Operands	None
Examples	To show the current Interface Manager card status:

```
/>show mgmt status
Interface manager status: Good
```

See Also	show mgmt info

show mgmt timezone

Description	Shows the Interface Manager card time zone.
Syntax	`show mgmt timezone`
Availability	All users and modes
Operands	None
Examples	To show the Interface Manager card time zone:

```
/>show mgmt timezone
Interface manager time zone: America/Denver (MST)
```

See Also	set mgmt timezone
	set mgmt clock
	show mgmt clock

show mode

Description   Shows the current command mode.

Syntax   `show mode`

Availability   All users and modes

Operands   None

Examples   To show the current command mode:

```
/>show mode
Current command mode: manual
```

See Also   set mode

show network dhcp

Description   Shows whether DHCP mode is enabled or disabled. When enabled, DHCP is used to set the Interface Manager card IP address.

Syntax   `show network dhcp`

Availability   All users and modes

Operands   None

Examples   To show whether DHCP mode is enabled or disabled:

```
/>show network dhcp
DHCP: disabled
```

See Also   set network dhcp

set network ipaddress

show network ipaddress

show network ipaddress

Description | Displays the current IP address, subnet mask, and gateway address for the Interface Manager card.

NOTE: The subnet mask and gateway address is only displayed if DHCP is disabled.

Syntax | `show network ipaddress`

Availability | All users and modes

Operands | None

Examples | To show the current IP address, subnet mask, and gateway address:

```
/>show network ipaddress
DHCP: disabled
IP address: 207.46.249.190
Subnet mask: 255.255.248.0
Gateway address: 207.46.72.1
```

See Also | set network dhcp

show network dhcp

set network ipaddress

show partition

Description | Shows which devices are assigned to a partition.

Syntax | `show partition [<number>|all]`

Availability | All users and modes

Operands | `<number>`   Specify the partition number.

          `all`   Shows information for all partitions.

Examples | To show information for partition 1 only:

```
/>show partition 1
```

To show information for all partitions:

```
/>show partition all
```

See Also | show host access

show robotics status

Description	Shows the status of the library robotics.
Syntax	`show robotics status`
Availability	All users and modes
Operands	None
Examples	To show the status of the library robotics:

```
/>show robotics status

Tape Library robotics status    : Red
Tape Library robotics available : Yes
Tape Library robotics Errors:
  Error #1  Firmware mismatch detected
```

See Also	show library info

show system assetnumber

Description	Shows the system asset number.
Syntax	`show system assetnumber`
Availability	All users and modes
Operands	None
Examples	To show the system asset number:

```
/>show system assetnumber
System asset number: 123456ABCD
```

See Also	set system assetnumber
	show system info

show system contact email

Description	Shows the system contact e-mail address.
Syntax	`show system contact email`
Availability	All users and modes
Operands	None
Examples	To show the system contact e-mail address:

```
/>show system contact email
System contact e-mail address: myname@myorg.com
```

See Also	set system contact email
	show system info

show system contact name

Description	Shows the system contact name.
Syntax	`show system contact name`
Availability	All users and modes
Operands	None
Examples	To show the system contact name:

```
/>show system contact name
System contact name: myfirstname_mylastname
```

See Also	set system contact name
	show system info

show system contact pager

Description	Shows the system contact pager.
Syntax	`show system contact pager`
Availability	All users and modes
Operands	None
Examples	To show the system contact pager:

```
/>show system contact pager
System contact pager: 444-444-4444
```

See Also	set system contact phone
	show system info

show system contact phone

Description	Shows the system contact phone number.
Syntax	`show system contact phone`
Availability	All users and modes
Operands	None
Examples	To show the system contact phone number:

```
/>show system contact phone
System contact phone number: 444-444-4444
```

See Also	set system contact phone
	show system info

show system info

Description   Shows all system information.

Syntax   `show system info`

Availability   All users and modes

Operands   None

Examples   To show all system information:

```
/>show system info
System information
System status: Good
System contact name: myfirstname_mylastname
System contact phone number: 444-444-4444
System contact pager number: 222-222-2222
System contact e-mail address: myname@myorg.com
System location: mylocation
System asset number: 123456ABCD
System name: mysystemname
```

See Also   show system status

show system location

Description   Shows the system location.

Syntax   `show system location`

Availability   All users and modes

Operands   None

Examples   To show the system location:

```
/>show system location
System location: mylocation
```

See Also   set system location

                show system info

show system name

Description	Shows the system name.
Syntax	`show system name`
Availability	All users and modes
Operands	None
Examples	To show the system name:

```
/>show system name
System name: mysystemname
```

See Also   set system name

show system info

show system status

Description	Shows the system status.
Syntax	`show system status`
Availability	All users and modes
Operands	None
Examples	To show the system status:

```
/>show system status
System status: Good
```

See Also	show system info

unmap host

Description	Blocks access to all of the current drives for the specified host.

CAUTION: Using this command could force a reboot of some interfaces. Ensure that no backup jobs are in progress before running this command.

Syntax	`unmap host <host_num>`	
Availability	All users and modes	
Operands	`<host_num>`	Specify the host number.
		This operand is required.
Examples	To block host 1 access to all drives:	

```
/>unmap host 1
Caution: Unmapping hosts could force a reboot of some interfaces
and will terminate all backup operations involving the rebooting
interfaces.
Do you really want to unmap the host? y

Committing configuration...done
```

See Also	map host
	set host name
	show host name

B   Supplemental Information

ALPA matrix

0:0x01	16:0x29	32:0x45	48:0x5A	64:0x75	80:0x9E	96:0xB5	112:0xD2
1:0x02	17:0x2A	33:0x46	49:0x5C	65:0x76	81:0x9F	97:0xB6	113:0xD3
2:0x04	18:0x2B	34:0x47	50:0x63	66:0x79	82:0xA3	98:0xB9	114:0xD4
3:0x08	19:0x2C	35:0x49	51:0x65	67:0x7A	83:0xA5	99:0xBA	115:0xD5
4:0x0F	20:0x2D	36:0x4A	52:0x66	68:0x7C	84:0xA6	100:0xBC	116:0xD6
5:0x10	21:0x2E	37:0x4B	53:0x67	69:0x80	85:0xA7	101:0xC3	117:0xD9
6:0x17	22:0x31	38:0x4C	54:0x69	70:0x81	86:0xA9	102:0xC5	118:0xDA
7:0x18	23:0x32	39:0x4D	55:0x6A	71:0x82	87:0xAA	103:0xC6	119:0xDC
8:0x1B	24:0x33	40:0x4E	56:0x6B	72:0x84	88:0xAB	104:0xC7	120:0xE0
9:0x1D	25:0x34	41:0x51	57:0x6C	73:0x88	89:0xAC	105:0xC9	121:0xE1
10:0x1E	26:0x35	42:0x52	58:0x6D	74:0x8F	90:0xAD	106:0xCA	122:0xE2
11:0x1F	27:0x36	43:0x53	59:0x6E	75:0x90	91:0xAE	107:0xCB	123:0xE4
12:0x23	28:0x39	44:0x54	60:0x71	76:0x97	92:0xB1	108:0xCC	124:0xE8
13:0x25	29:0x3A	45:0x55	61:0x72	77:0x98	93:0xB2	109:0xCD	125:0xEF
14:0x26	30:0x3C	46:0x56	62:0x73	78:0x9B	94:0xB3	110:0xCE	
15:0x27	31:0x43	47:0x59	63:0x74	79:0x9D	95:0xB4	111:0xD1	

Index